# PROCEEDINGS OF THE FIRST PAN PACIFIC CONFERENCE ON EDUCATION, REHABILITATION, RECLAMATION, AND RECREATION

*Held at Honolulu, Hawaii*
*April 11 to 16, 1927*

*United States Department of the Interior - Washington, D. C.*

FRONTISPIECE



HON. HUBERT WORK, SECRETARY OF THE INTERIOR; HON. WALLACE R. FARRINGTON, GOVERNOR OF HAWAII

# FIRST PAN PACIFIC CONFERENCE ON EDUCATION, REHABILITATION, RECLAMATION AND RECREATION

CALLED BY THE PRESIDENT OF THE UNITED STATES OF AMERICA IN CONFORMITY WITH A JOINT RESOLUTION OF THE SENATE AND HOUSE OF REPRESENTATIVES OF THE UNITED STATES AND HELD UNDER THE AUSPICES OF THE DEPARTMENT OF THE INTERIOR AT HONOLULU, HAWAII, APRIL 11 TO 16, 1927

*Report of the Proceedings*

UNITED STATES
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# LETTER OF TRANSMITTAL

DEPARTMENT OF THE INTERIOR,
*Washington, D. C., June 20, 1927.*

SIRS: Pursuant to the provisions of a joint resolution of the Senate and House of Representatives, approved July 3, 1926, I have the honor to submit herewith the report of the proceedings of the First Pan Pacific Conference on Education, Rehabilitation, Reclamation, and Recreation called by the President of the United States and held at Honolulu, Territory of Hawaii, April 11 to 16, inclusive, 1927. An appropriation of $20,000 for the necessary expenses incident to the conference was made in Public Act No. 660, Sixty-ninth Congress, approved February 28, and remains available until December 31, 1927. A separate detailed statement of expenditures will be found in the appendix to this report.

Very respectfully,

HUBERT WORK,
*Secretary.*

The PRESIDENT OF THE SENATE.
The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

# *FOREWORD*

## *Aims and Purposes*

The purposes of the First Pan Pacific Conference on Education, Rehabilitation, Reclamation, and Recreation, held at Honolulu, Hawaii, April 11 to 16, 1927, were: To establish a basis of cooperation for the promotion of peaceful arts and pursuits among the countries participating; to provide a medium for exchange of knowledge on the subjects under discussion; to afford a wider field of service for certain technical activities; and to be of assistance to the territories of the several participating countries.

## *Authorization*

The conference was authorized by a joint resolution of the Congress of the United States of America, approved July 3, 1926, as follows:

*Resolved by the Senate and House of Representatives of the United States of America in Congress assembled,* That the President is hereby authorized and requested to call a conference on education, rehabilitation, reclamation, and recreation, to be held at Honolulu, Hawaii, in April or May of 1927; and to extend invitations to such Governments as in his judgment should be represented at the conference.

The Secretary of the Interior, subject to the approval of the President, is hereby given full authority for the inauguration and maintenance of such conference, the preparation of and sending necessary exhibits thereto, purchase of necessary supplies and equipment, for telephone, telegraph, or cable service, freight and express charges, for travel and subsistence of employees of the Interior Department or representatives thereof, and for other necessary expenses incident to the conference, including the employment of assistants in or outside of the District of Columbia, the sum of $20,000 is hereby authorized to be appropriated, from any money in the Treasury not otherwise appropriated, to be immediately available and to continue available until December 31, 1927.

The Secretary of the Interior shall make a report of the proceedings of the conference and a detailed statement of expenditures to the Congress of the United States at the session next following the conference.

The appropriation necessary to carry out the provisions of the resolution was made available by Public Act No. 660, Sixty-ninth Congress, approved February 28, 1927, and entitled:

An act making appropriations to supply urgent deficiencies in certain appropriations for the fiscal year ending June 30, 1927, and prior fiscal years, and to provide urgent supplemental appropriations for the fiscal year ending June 30, 1927, and for other purposes.

The appropriation remains available until December 31, 1927.

### *Official Participants*

The President of the United States called the conference, and invitations were extended through the Department of State to all countries bordering on the Pacific Ocean and having territorial interests in the Pacific, including colonial governments. These comprise Australia, Canada, Chile, China, Colombia, Costa Rica, Dutch East Indies, France, French Cochin-China, Great Britain, Guatemala Honduras, India, Japan, Macao, Mexico, Netherlands, New Zealand Nicaragua, Oceania, Panama, Peru, Portugal, Salvador, and Siam.

Invitations to participate were issued to the various departments of the United States Government, to the governor of each State, to any official of the State who might be interested, and to the responsible administrations of Alaska, the Canal Zone, Hawaii, the Philippines, Porto Rico, American Samoa, and the Virgin Islands.

Departments of public instruction and colleges and universities in the States and the above-named outlying parts of the United States, and all organizations and institutions, public or private, which are engaged or interested in the fields covered by the conference, were invited to send delegates. All invitations included also an invitation to send material to be made part of an international exhibit relating to the major interests of the conference and held in conjunction with it.

### *Representation and Membership*

The total membership of the conference numbered 53 official delegates from Governments officially participating and 171 appointive members representing institutions, organizations and societies, or persons having a special interest in the deliberations. Twelve foreign countries were represented, as follows: Australia, 5 delegates; Chile, 1; Colombia, 2; Fiji Islands and western Pacific, 1; France, 1; Great Britain, 1; Japan, 9; Mexico, 3; New Zealand, 1; Nicaragua, 1; and Peru, 1; a total of 26. Delegates from the Government of the United States were: Department of the Interior, 10; Department of Agriculture, 1; Treasury Department, 1; Federal Board for Vocational Education, 1; and Civil Service Commission, 1; total 14. Official representation of the States, Territories, and outlying parts of the United States came from Massachusetts, 1; Hawaii, 7; American Samoa, 1; Mississippi, 1; New Mexico, 1; and Utah, 1; total, 12.

One university in China, 3 in Japan, and 92 in the United States participated by sending delegates or choosing alumni resident in or near Honolulu as their representatives. Fifty-six associations directly or indirectly engaged in some of the activities under discussion selected members to attend the conference. Twenty-one persons were appointed delegates at large.

### *Plan of the Conference*

The conference convened on Monday, April 11, and closed on Saturday, April 16, 1927. The official language was English. The Secretary of the Interior of the United States was general chairman, having full authority for the inauguration and conduct of the conference, and presided at the opening and closing formal sessions.

The conference was divided into three sections: Education, reclamation, and recreation. Each section held 7 meetings of 3 to 3½ hours each and in these group gatherings, where more or less informal round-table discussions were carried on, most of the work of the conference was done. The permanent chairmen of the sections were the Commissioner of Education, the Commissioner of Reclamation, and the Director of the National Park Service, respectively, of the Department of the Interior, but other official delegates were called upon to conduct many of the section meetings.

### *Agenda*

The subjects to which the conference confined its deliberations were set out in preliminary agenda approved by the Department of State and thought to be of paramount interest to the peoples of the countries participating. They are:

*Education*

(1) Exchange of educational ideas through—
   (*a*) Establishment and maintenance of centers for the exchange and distribution of adequate translations of laws, decrees, texts, publications, etc.
   (*b*) Exchange of lecturers, teachers, students, research workers, and others interested or actively engaged in education.
   (*c*) The formulation of principles and standards for credential acceptance and evaluation.
(2) Establishment and preservation of national standards for child life through—
   (*a*) Proper care of the mother and the infant.
   (*b*) Furnishing a certain minimum number of years of instruction and requiring the child's attendance.
   (*c*) Instruction in health habits and provision of proper recreation.
(3) Vocational education:
   (*a*) The place of vocational education in the general educational program.
   (*b*) Government plans for stimulation of vocational education.
   (*c*) The rehabilitation of civilians disabled in industry.

*Reclamation*

(1) Efforts of the State to aid homesteaders and build up communities of small farm owners.
(2) The relation of marketing agencies to the successful settlement of public lands.
(3) The relationship of the State to planting contracts and the homesteader's dealings with the mill or cannery at which his product is handled.
(4) Methods for extending public credit to homestead development enterprises.
(5) Laws for the regulation and use of streams in irrigation.
(6) Engineering problems connected with storage and distribution of water.

*Recreation*

(1) The vital relation of outdoor recreation to the health, physical, mental, and spiritual, of the Nation.
(2) The important part that national parks play in the outdoor recreational field.
(3) The place of national parks in an educational program as natural museums wherein the flora and fauna native to the region may be studied, rock forms examined, and the results of volcanism, glacial action, and erosion observed.
(4) The protection and preservation of indigenous plants and animals.
(5) Administration and management of parks.
(6) Correlation of Government and private efforts along conservative lines, including establishment of State and municipal parks.

*Exhibits*

Present-day educational and welfare activities in Mexico were illustrated and described in many sets of valuable books brought to the conference for display and distribution. Pamphlets outlining the educational facilities of Japan were available for all the delegates. Vocational education in most of its aspects was emphasized in a display of materials, graphs, and publications furnished by the Department of Education of Hawaii and the Federal Board for Vocational Education. The results of various research studies made in the fields of infant and maternal welfare and suggestions as to the proper care of children were contributed by the Children's Bureau of the Department of Labor. Wholesome group organizations and outdoor activities for young people were portrayed in a series of pictures and publications from the Girl Scouts of America. A display of designs in color as examples of the conscious application of art principles to the study of originality in design was sent by the first-year students in the art department of Fisk University, Nashville, Tenn.

Recreation for the citizens of the Nation and the care and preservation of areas of natural scenic beauty and scientific value through the establishment of national parks and monuments were demonstrated by a number of models, pictures, and collections of data assembled and arranged by the National Park Service of this department.

Various reclamation projects throughout the world, their areas and production, and especially the results of the national reclamation policy begun and carried on in the United States under the Newlands law of 1903, and amendatory acts were graphically shown in colored photographs and tables of information supplied by the Bureau of Reclamation.

Education in the United States, in most of its phases, such as State, county and city school administration, rural school problems and their solution, education of the natives in Alaska, and the work of the Bureau of Education, was presented to the members of the conference and visitors through a series of 123 charts, graphs, and photographs, arranged by the Bureau of Education.

### *Publications*

Each of the three bureaus of the Department of the Interior and most of the other organizations having exhibits distributed considerable numbers of their publications to the delegates. Notable among the publications especially prepared for, and useful in the conference were: The Bureau of Reclamation, Its Functions and Accomplishments; Education in the United States of America; Glimpses of Our National Parks; and Glimpses of Our National Monuments.

### *The Place of Meeting*

Besides these representations in printed word, picture, graph, and model afforded by the exhibit to the delegates for study and use in their discussions, the Hawaiian Islands presented a natural laboratory where in small compass some actual examples of most of the activities under consideration could be seen in operation. The organized public-school system, including a land-grant college, of the Territory; a Territorial plan of restoring the native Hawaiians to their lands; large areas reclaimed and cultivated by irrigation; and one of the most famous of our national parks were at hand.

Through the fine courtesy of the government of Hawaii, its various organizations, and its citizens, the delegates were given ample opportunity to visit and see all of these and become informed about them.

Space does not permit a detailed account of excursions and entertainments planned and carried out by the Territory, supplementary

to the work of the actual sessions and contributing greatly to their success. They are listed in the program. Three of them, however, have so distinct a bearing on the agenda of the conference that short descriptions are given.

### *Education*

The schools of Hawaii, having adjourned for the Easter vacation, were not in session but the educators and other delegates were privileged to see an example of their work with children of many different nationalities in a remarkable flower festival and pageant of the races enacted at the Territorial Fair Grounds by the pupils of 30 or more public and private schools and students of the Territorial normal school and the university.

The pageant portrayed first the old Hawaii, the customs of its people, its government and court life, and its native industries. Following this, groups of school children in turn enacted scenes representative of the discovery of the islands by the English and the Spaniards, and the coming of the Caucasian, Chinese, Japanese, Portuguese, Porto Rican, Korean, Spanish, and Filipino peoples and the distinctive contribution each has made to the social and industrial welfare of the Territory.

This more historical part of the pageant gave way to present-day scenes—the melting pot in operation—in which the promotion of common ideals and standards through education in the schools and in such organizations as literary and debating clubs, Girl Reserves, Girl Scouts, and Boy Scouts, and the R. O. T. C. was depicted.

The final scenes were devoted to patriotic numbers, the most picturesque of which was the march of a group of children massed in the form of the United States flag. The pageant closed with the singing of "Aloha" and the Star-Spangled Banner.

### *Reclamation*

One of the most interesting trips outside of Honolulu, made by the delegates of the Reclamation Section, was that to the Island of Molokai to inspect the homestead settlements at Hoolehua, Palaau, and Kalanianaole under the Hawaiian Homes Commission. Here 116 homesteaders are developing 40-acre farms and house lots and furnishing a striking example of what may be accomplished, under careful guidance, in bringing the Hawaiians back to the land. Many of the delegates of the Reclamation Section also visited the settlement at Keaukaha, Waiakea, on the Island of Hawaii, where 80 families, former tenement dwellers in the city of Hilo, are occupying 1-acre house lots under the direction of the Homes Commission, developing a community spirit, and giving every promise of success.



'THE HUMAN FLAG"
FLOWER FESTIVAL REPRESENTING HISTORIC SCENES IN THE DEVELOPMENT OF HAWAII

### *Recreation*

Immediately following the final session of the conference the delegates were taken to visit the islands of Maui and Hawaii. On the latter they spent the night and the greater part of the day in the Kilauea section of the Hawaiian National Park. This park, containing approximately 118,000 acres, has been set aside as one of the characteristic volcanic areas of the world. Within its confines are Mauna Loa, which was in violent eruption in April of 1926; and Kilauea, until very recently continuously active for a century or more. The policies of the Government of the United States in making these areas, with their lava tubes and tree moulds formed by volcanic action, all closely bordered by tropical vegetation with such unusual growths as the tree ferns, readily accessible by the construction of good roads and trails and comfortable hotels were here demonstrated. The delegates participated in the dedication of the Uwekahuna observatory and exhibit station designed to further the science of volcanology and aid visitors in understanding the phenomena of volcanic action. It was donated to the Department of the Interior by the Hawaii Volcano Research Association.

### *Lecture Service*

Apart from the conference sessions both foreign and American delegates rendered special service in their particular fields by delivering a considerable number of addresses and illustrated talks at community gatherings, meetings of educational associations, and general meetings open to the public.

## *Officers of the First Pan Pacific Conference on Education, Reclamation, and Recreation*

### *General Conference*

General chairman: Hon. Hubert Work, Secretary of the Interior.
Executive secretary: K. C. Leebrick, University of Hawaii.

**Education section:**

General chairman: John J. Tigert, United States Commissioner of Education.
Secretary: Theo. Honour, United States Burcau of Education.

**Reclamation section:**

General chairman: Elwood Mead, United States Commissioner of Reclamation.
Secretary: Hugh A. Brown, United States Bureau of Reclamation.

**Recreation section:**

General chairman: Stephen T. Mather, Director, United States National Park Service.
Secretary: Ansel F. Hall, chief naturalist, National Park Service.

### *List of Delegates*

### UNITED STATES GOVERNMENT DEPARTMENTS

**Department of the Interior:**

Hon. Hubert Work, Secretary of the Interior.
W. J. Donald, secretary to Doctor Work.
John J. Tigert, Commissioner of Education.
Theo. Honour, Bureau of Education.
J. F. Abel, Bureau of Education.
Elwood Mead, Commissioner of Reclamation.
H. A. Brown, Bureau of Reclamation.
Stephen T. Mather, Director of the National Park Service.
Ansel F. Hall, chief naturalist, National Park Service.
R. T. Evans, superintendent of Hawaii National Park, National Park Service.

**Department of Agriculture:**

Nils Olsen, Assistant Chief of the Bureau of Agricultural Economics, Washington, D. C.

**Department of the Treasury:**

Hugh Cumming, Surgeon General, Public Health Service, Washington, D. C.

**Federal Board for Vocational Education:**

J. C. Wright, Director of Federal Board for Vocational Education, Washington, D. C.

**United States Civil Service Commission:**

Mrs. Guri T. Lomnes, chairman-secretary, board of United States Civil Service examiners, Honolulu, Hawaii.

## REPRESENTATIVES OF FOREIGN COUNTRIES

**Australia:**

William Cattanach, chairman, State Rivers and Water Supply Commission, Treasury Gardens, Melbourne, Australia.

S. H. Smith, Under Secretary and Director of Education, New South Wales, Australia.

Ralph E. Boardman, general manager Horticultural Press and representing Australian newspapers, Playground Association of Victoria, Tree Planters Association of Victoria, Melbourne, Australia.

E. J. Manchester, president, Metropolitan Water Supply and Sewerage Board, Brisbane, Australia.

C. F. Ede, Metropolitan Water Supply and Sewerage Board, Brisbane, Australia.

**Chile:**

J. W. Waldron, consul at Honolulu, Hawaii.

**Colombia:**

Carlos Cuero Borda.

Francisco de P. Barrera.

**Fiji Islands and Western Pacific:**

Islay McOwan, Secretary for Native Affairs, Suva, Fiji.

**France:**

M. Gourdon, Inspector General of Public Instruction, and for the French Government in Indo-China.

**Great Britain:**

G. H. Phipps, British consul at Honolulu, Hawaii.

**Japan:**

N. Murakami, Ministry of Education; director, Tokyo Academy of Music, Tokyo; Commissioner of Historical Compilation, Imperial University of Tokyo.

S. Hirota, Ministry of Education; president, Kobe Technical College, Kobe.

T. Harada, Ministry of Education; University of Hawaii, Honolulu, Hawaii.

S. Oda, representative of the Government-General of Korea; Imperial University of Keijo, Keijo, Korea.

K. Kachi, Ministry of Agriculture and Forestry, Tokyo.

S. Uchida, Ministry of Agriculture and Forestry, Tokyo.

M. Miyoshi, Ministry of Home Affairs; Member of the Imperial Academy of Japan, Tokyo.

S. Ujihara, Ministry of Home Affairs; senior medical officer of the Health Bureau, Tokyo.

K. Uyehara, Ministry of Home Affairs; director, Tokyo School of Landscape Gardening; Parks Administration, Tokyo.

**Mexico:**

Salvador Novo, chief of the editorial department, Secretariat of Education of Mexico.

Jose Arturo Pichardo, chief of the department of primary and normal instruction, Secretariat of Education of Mexico.

Jose Mares, member, National Commission on Irrigation, Mexico City.

**New Zealand:**

W. F. Kennedy, Dunedin, New Zealand.

**Nicaragua:**

Ignacio Garcia Bojas, consul at Manila, Philippine Islands.

**Peru:**

Antonio D. Castro, Peruvian consul at Honolulu, Hawaii.

Enrique Torres Belon, member of Congress, and engineer in reclamation work, Lima, Peru.

## STATES AND TERRITORIES

**Massachusetts:**

Miss Anne Withington, Newburyport, Mass.

**Hawaii:**

W. R. Farrington, Governor of Hawaii.

Will C. Crawford, Territorial superintendent of public instruction.

C. S. Judd, executive secretary, Board of Agriculture and Forestry.

A. L. Dean, University of Hawaii.

Mrs. F. M. Swanzy, chairman, Honolulu Recreation Committee.

F. G. Krauss, University of Hawaii.

Rudolph Duncan, secretary, Hawaii Homes and Rehabilitation Commission.

## STATE SUPERINTENDENTS OF PUBLIC INSTRUCTION

**American Samoa:**

K. Su'a, of the Department of Education, Pago Pago, Samoa.

**Hawaii:**

Will C. Crawford, superintendent of public instruction of the Territory of Hawaii, Honolulu, Hawaii.

**Mississippi:**

W. F. Bond, State superintendent of education, Jackson, Miss.

**New Mexico:**

Miss Lois Randolph, State superintendent of public instruction, Santa Fe, N. Mex.

**Utah:**

C. N. Jensen, State superintendent of public instruction, Salt Lake City, Utah.

## DELEGATES AT LARGE

A. O. Burkland, United States Geological Survey, Honolulu, Hawaii.

Chester David Brown and Mrs. Brown, Danbury, Conn.

Raymond C. Brown, secretary of Hawaii, Honolulu, Hawaii.

Howard C. Crossman, Aberdeen Farm, Hampton Falls, N. H.

Fred W. Dohrman, jr., Board of Education, San Francisco, Calif.

Henry A. Dubbs, Colorado National Bank Building, Denver, Colo.

A. C. Hardison, American Farm Bureau, Santa Paula, Calif.

O. Hayakawa, Recreation Group, Tokyo; Society for Preservation of Scenery and National Monuments of Japan.

Mrs. C. N. Jensen, Salt Lake City, Utah.

K. F. Lum, Aloha Lane, Honolulu, Hawaii.

J. R. Mason, San Francisco, Calif.

M. B. McIntosh, 1518 Lewis Avenue, Honolulu, Hawaii.

John S. McMillin, Seattle Chamber of Commerce, Roche Harbor, Wash.

Earle Raiguel, 1909 Panama Street, Philadelphia, Pa.

Mrs. Lucile R. Richards, Library of Hawaii, Honolulu, Hawaii.

W. H. Smith, Hilo, Hawaii.



GROUP OF OFFICIAL DELEGATES AT THE CONFERENCE

Mrs. John J. Tigert, Washington, D. C.
C. C. Teague, California Development Board, Santa Paula, Calif.
Miss Louise Van Wagenen, Hilo Women's Club, Hilo, Hawaii.
G. R. Virgo, Makawcli, Kauai, Hawaii.

## EDUCATIONAL INSTITUTIONS

**Alma College, Alma, Mich.:**
James L. McBride,
Schofield Barracks, Honolulu, Hawaii.

**Ashbury College, Wilmore, Ky.:**
N. C. Dizon,
Liliha and Vineyard Streets, Honolulu, Hawaii.

**Athens College, Athens, Ala.:**
Miss Ha Soo Whang,
1562 Nuuanu Avenue, Honolulu, Hawaii.

**Baylor College, Belton, Tex.:**
Mrs. Laura Jones Loader,
2936 Park Street, Honolulu, Hawaii.

**Boston University, Boston, Mass.:**
Irving O. Pecker,
University of Hawaii, Honolulu, Hawaii.

**Bowdoin College, Brunswick, Me.:**
George W. Ricker,
Fort Kamehameha, Honolulu, Hawaii.

**Brown University, Providence, R. I.:**
Andrew Adams,
Box 1841, Honolulu, Hawaii.

**Case School of Applied Science, Cleveland, Ohio:**
Herman F. Bomonti,
H. S. P. A., Honolulu, Hawaii.

**Colgate University, Hamilton, N. Y.:**
Frank E. Midkiff,
President, Kamehameha Schools, Honolulu, Hawaii.

**College of Charleston, Charleston, S. C.:**
Alexander Hume Ford,
Pan Pacific Union, Honolulu, Hawaii.

**College of Puget Sound, Tacoma, Wash.:**
W. H. Fry,
2728 Hillside Avenue, Honolulu, Hawaii.

**Colorado College, Colorado Springs Colo.:**
Miss Mary Card Porter,
Honolulu, Hawaii.

**Colorado State Agricultural College, Fort Collins, Colo.:**
Leslie A. Carlson,
Hilo, Hawaii.

**Columbia University, New York City:**
Miss Anna Olsen,
1049 Thirty-sixth Street, Des Moines, Iowa.

**Cornell College, Mount Vernon, Iowa:**
Mrs. Phillip Allen Swartz,
Central Union Church, Honolulu, Hawaii.

**DePauw University, Greencastle, Ind:**
Horace L. Burr,
Newcastle, Ind.

**Dickinson College, Carlisle, Pa.:**
Colbert N. Kurokawa,
Pan Pacific Union, Honolulu, Hawaii.

**Doshisha University, Kyoto, Japan:**
T. Okumura.
1239 King Street, Honolulu, Hawaii.

**Drake University, Des Moines, Iowa:**
John C. Hirschler,
Hilo, Hawaii.

**Emanuel Missionary College, Berrien Spring, Mich.:**
H. D. Wheeler,
3840 Sierra Avenue, Honolulu, Hawaii.

**Eureka College, Eureka, Ill.:**
Mrs. Myrtle Record Andrus,
Box 353, Honolulu, Hawaii.

**Fisk University, Nashville, Tenn.:**
Wade H. McCree,
213 Federal Building, Honolulu, Hawaii.

**Grand Island College, Grand Island, Nebr.:**
Max Carson, and Mrs. Carson,
20th and Kaimuki Avenue, Honolulu, Hawaii.

**Harvard University, Cambridge, Mass.:**
W. F. Dillingham,
Diamond Head, Honolulu, Hawaii.
Alfred M. Tozzer,
Harvard University, Cambridge, Mass.

**Huron College, Huron, S. Dak.:**
George Shannon McCune, President, Huron, S. Dak.

**Indiana University, Bloomington, Ind.:**
Mrs. Horace L. Burr,
Newcastle, Ind.

**Keio University, Tokyo, Japan:**
Y. Imamura,
Tokyo, Japan.

**Lehigh University, Bethlehem, Pa.:**
Robert McBride Purvis,
Bank of Bishop, Honolulu, Hawaii.

**Luther College, Decorah, Iowa:**
F. E. Peterson,
Territorial Teachers College, Honolulu, Hawaii.

**Marietta College, Marietta, Ohio:**
John L. Hopwood,
2410 Kaala Avenue, Honolulu, Hawaii.

**Massachusetts Agricultural College, Amherst, Mass.:**
Nils P. Larsen,
Queen's Hospital, Honolulu, Hawaii.

**Medical College of Virginia, Richmond, Va.:**
Fleet Shelton Steele,
Pearl Harbor, Hawaii.

**Meiji University, Tokyo, Japan:**
Minen Yasui,
Y. M. C. A., Honolulu, Hawaii.

**Michigan State College of Agriculture and Applied Science, Lansing, Mich.:**
Arthur Mason,
2324 Kaala Avenue, Honolulu, Hawaii.

**Morgan College, Baltimore, Md.:**
W. F. Crockett,
Wailuku, Maui, Hawaii.

**Mount Union College, Alliance, Ohio:**
Young Kee Kim,
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**Northwestern University, Evanston, Ill.:**
Lewis Hanke,
University of Hawaii, Honolulu, Hawaii.

**Oberlin College, Oberlin, Ohio:**
William Drake Westervelt,
2963 Kalakaua Avenue, Honolulu, Hawaii.

**Ohio Wesleyan University, Delaware, Ohio:**
Henry Butler Swartz,
Koloa, Kauai, Hawaii.

**Oxford College for Women, Oxford, Ohio:**
Mrs. Leland Porter Miller,
Honolulu, Hawaii.

**Park College, Parkville, Mo.:**
Fred Frizelle,
Department of Education, Honolulu, Hawaii.

**Pennsylvania College for Women, Pittsburgh, Pa.:**
Mrs. J. M. Young,
University of Hawaii, Honolulu, Hawaii.

**Pennsylvania State College, State College, Pa.:**
Theodore B. Bush,
922 Fifteenth Avenue, Honolulu, Hawaii.

**Purdue University, La Fayette, Ind:**
Maxwell Osear Johnson.
Wahiawa, Oahu, Hawaii.

**Radcliffe College, Cambridge, Mass.:**
Alfred M. Tozzer,
Harvard University, Cambridge, Mass.

**Reed College, Portland, Oreg.:**
Arthur Hauck,
Punahou School, Honolulu, Hawaii.

**St. John's College, Annapolis, Md.:**
Douglas F. Duvall,
Hawaiian Department, Honolulu, Hawaii.

**Shurtleff College, Alton, Ill.:**
Frank E. Midkiff,
President, Kamehameha School, Honolulu, Hawaii.

**Southwestern Louisiana Institute, Lafayette, La :**
Roy L. Dalferes,
Schofield Barracks, Honolulu Hawaii.

**Southwestern University, Georgetown, Tex.:**
Theophilus Lee, jr.,
Lihue, Kauai Island, Hawaii.

**Stanford University, Palo Alto, Calif.:**
Frederick G. Krauss,
2447 Parker Avenue, Honolulu, Hawaii.

**State College of Washington, Pullman, Wash.:**
Ray M. O'Day,
Hawaiian Department, Honolulu, Hawaii.

**State Teachers College, Minot, S. Dak.:**
Miss Lucille Hodgins,
Ewa, Hawaii.

**Syracuse University, Syracuse, N. Y.:**
Chauncey J. Hamlin,
1014 Delaware Avenue, Buffalo, N. Y.

**Tsing Hua College, China:**
Shao Chang Lee,
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**Tufts College, Tufts College, Mass.:**
Arthur Lynn Andrews,
Dean, University of Hawaii, Honolulu, Hawaii.

**Tulane University of Louisiana, New Orleans, La.:**
Thomas R. McCarley,
Schofield Barracks, Honolulu, Hawaii.

**Union College, Schenectady, N. Y.:**
Robert Henry Lowrie,
Kamehameha School, Honolulu, Hawaii.

**University of Buffalo, Buffalo, N. Y.:**
Samuel P. Capen,
Chancellor of University of Buffalo, Buffalo, N. Y.

**University of California, Berkeley, Calif.:**
Thomas F. Hunt,
University of California, Berkeley, Calif.
Elwood Mead,
Department of the Interior, Washington, D. C.
Leon J. Richardson,
Director of University Extension, University of California, Berkeley, Calif.
Ernest Linwood Walker,
Professor of Tropical Medicine in the Hooper Foundation, Honolulu, Hawaii.

**University of Chicago, Chicago, Ill.:**
Riley H. Allen,
Honolulu Star-Bulletin, Honolulu, Hawaii.

**University of Colorado, Boulder, Colo.:**
Robert B. Faus,
Young Building, Honolulu, Hawaii.

**University of Dayton, Dayton, Ohio:**
Adolph Eiben,
President St. Louis College, Honolulu, Hawaii.

**University of Hawaii, Honolulu, Hawaii:**
A. L. Dean,
University of Hawaii, Honolulu, Hawaii.

**University of Illinois, Urbana, Ill.:**
William Clarence Smith Lemen,
Engineer Headquarters, Hawaiian Department, Honolulu, Hawaii.

**University of Iowa, Iowa City, Iowa:**
C. H. Edmonson,
University of Hawaii, Honolulu, Hawaii.

**University of Kansas, Lawrence, Kans.:**
Adna G. Clarke,
University of Hawaii, Honolulu, Hawaii.

**University of Kentucky, Lexington, Ky.:**
Thayne Miller Livesay,
University of Hawaii, Honolulu, Hawaii.

**University of Maine, Orono, Me.:**
C. E. S. Burns,
Lahaina, Maui, Hawaii.
Gardiner B. Wilkins,
2438 Manoa Road, Honolulu, Hawaii.
Charles D. Rea,
Waialua, Hawaii.

**University of Michigan, Ann Arbor, Mich.:**
F. C. Newcombe,
1928 Vancouver Highway, Honolulu, Hawaii.

**University of Minnesota, Minneapolis, Minn.:**
Harold L. Lyon,
1328 Marlock Avenue, Honolulu, Hawaii.

**University of Montana, Missoula, Mont.:**
George Armitage,
Tourist Bureau, Honolulu, Hawaii.

**University of Nebraska, Lincoln, Nebr.:**
Charles W. Weeks,
Schofield Barracks, Honolulu, Hawaii.

**University of Oklahoma, Norman, Okla.**
Mrs. Mary Robey Harris,
2460 Koa Avenue, Honolulu, Hawaii.

**University of Oregon, Portland, Oreg.**
George H. Godfrey,
Tribune-Herald, Hilo, Hawaii.

**University of Pennsylvania, Philadelphia, Pa.:**
Edwin E. Schreiner,
Hawaiian Department, Honolulu, Hawaii.

**University of Redlands, Redlands, Calif.:**
Harold Loper,
Lihue, Hawaii.

**University of Southern California, Los Angeles, Calif.:**
John Hedley,
Box 2956, Honolulu, Hawaii.

**University of South Dakota, Vermilion, S. Dak.:**
A. O. Burkland,
2523 E. Manoa Road, Honolulu, Hawaii.

**University of Vermont, Burlington, Vt.:**
C. T. Bailey,
Executive Building, Honolulu, Hawaii.

**University of Virginia, Charlottesville, Va.:**
Frederick B. Trotter,
Board of Health, Honolulu, Hawaii.

**University of Washington, Seattle, Wash.:**
Victor M. Aitkin,
Punahou School, Honolulu, Hawaii.

**University of Wichita, Wichita, Kans.:**
Harry Hale,
18 Pensacola Court, Honolulu, Hawaii.

**University of Wisconsin, Madison, Wis.**
Mrs. Mabel V. Lacy,
3440 Leahi Avenue, Honolulu, Hawaii.

**University of Wooster, Wooster, Ohio:**
Homer L. Ross,
Hilo, Hawaii.

**University of Wyoming, Laramie, Wyo.:**
J. B. Nelson,
1647 Liholiho Street, Honolulu, Hawaii.

**Wells College, Aurora, N. Y.:**
Miss Marjorie Babcock,
University of Hawaii, Honolulu, Hawaii.
Miss Pauline Jones,
University of Hawaii, Honolulu, Hawaii.

**Wellesley College, Wellesley, Mass.:**
Miss Elsie H. Wilcox,
Lihue, Kauai, Hawaii.

**Wesleyan University, Delaware, Ohio:**
Henry Butler Schwartz,
Koloa, Kauai, Hawaii.

**West Point Military Academy, West Point, N. Y.:**
William Kelly, jr.,
Fort Shafter, Honolulu, Hawaii.

**Western College for Women, Oxford, Ohio:**
Mrs. H. A. Gough, Hilo, Hawaii.

**Wheaton College, Norton, Mass.:**
Mrs. Matthew M. Graham,
2646 Oahu Avenue, Honolulu, Hawaii.

**Whittier College, Whittier, Calif.:**
Roy Votaw,
Y. M. C. A., Honolulu, Hawaii.

**Williams College, Williamstown, Mass.:**
William Williamson, Hawaii.
Box 3413, Honolulu, Hawaii.

**Worcester Polytechnic Institute, Worcester, Mass.:**
Frank Dillingham,
University of Hawaii, Honolulu, Hawaii.

**Yale University, New Haven, Conn:**
Albert F. Judd,
622 Judd Street, Honolulu, Hawaii.

## EDUCATIONAL, SCIENTIFIC, TECHNICAL ASSOCIATIONS, ETC.

**American Academy for Deaf and Blind:**
Mrs. Mabel V. Lacy,
Principal, Territorial School for Deaf and Blind, Honolulu, Hawaii.

**American Association for Adult Education:**
Leon J. Richardson,
University of California, Berkeley, Calif.

**American Association for the Advancement of Science:**
Nils P. Larsen,
Queen's Hospital, Honolulu, Hawaii.
Alfred M. Tozzer,
Box 2990, Honolulu, Hawaii.
F. C. Newcombe,
1928 Vancouver Highway, Honolulu, Hawaii.

**American Association of Museums:**
Chauncey J. Hamlin,
1014 Delaware Avenue, Buffalo, N. Y.

**American Association of University Professors:**
Leon J. Richardson,
University of California, Berkeley, Calif.

**American Academy of Political and Social Science:**
Charles F. Loomis,
Executive secretary, Institute of Pacific Relations, Honolulu, Hawaii.

**American Academy of Speech Correction:**
Mrs. Mabel V. Lacy,
3440 Leahi Avenue, Honolulu, Hawaii.
Dr. Robert West,
Honolulu, Hawaii.

**American Council on Education:**
Samuel P. Capen,
University of Buffalo, Buffalo, N. Y.

**American Farm Bureau Federation:**
A. C. Hardison,
Santa Paula, Calif.

**American Friends Service Committee:**
Charles E. Cox and Mrs. Cox, Richmond, Ind.

**American Olympic Association:**
Mrs. E. Fullard-Leo, 2389 Prince Edward Street, Honolulu, Hawaii.

**American Physical Education Association:**
James A. Rath, Palama Settlement, Honolulu, Hawaii.
H. O. Pfaender, Y. M. C. A., Honolulu, Hawaii.
A. K. Powlison, Supervisor of Play and Recreation, Honolulu, Hawaii.

**American Museum of National History:**
Chauncey J. Hamlin, 1014 Delaware Avenue, Buffalo, N. Y.

**Association of Departments of Education in Land-Grant Colleges and Universities:**
Thayne Miller Livesay, 2621 E. Manoa Road, Honolulu, Hawaii.

**Bishop Museum:**
E. H. Bryan, Curator, Bishop Museum, Honolulu, Hawaii.

**Botanical Society of America:**
Herbert F. Bergman, University of Hawaii, Honolulu, Hawaii.

**Campfire Club of America:**
A. S. Houghton, New York City.

**Character Education Institution of the U. S. A.:**
Theo. Honour, Department of Interior, Washington, D. C.

**Christian Science Monitor:**
George H. Godfrey, Care Herald-Tribune, Hilo, Hawaii.

**Columbia Basin Irrigation League, Spokane, Wash.:**
Marshall N. Dana, Associate Editor, Oregon Journal, Portland, Oreg.

**Committee on Friendly Relations Among Foreign Students:**
Dwight H. Rugh, University of Hawaii, Honolulu, Hawaii.

**Free Kindergarten and Children's Aid Association:**
Mrs. F. M. Swanzy, Manoa Road, Honolulu, Hawaii.

**Girl Scouts, Inc.:**
Miss Agnes E. Judd, 66 Wyllie Street, Honolulu, Hawaii.

**Hawaii Education Association:**
Will C. Crawford, Superintendent of Public Instruction, Honolulu, Hawaii.
Benjamin O. Wist, President, Territorial Normal School, Honolulu, Hawaii.
Arthur L. Dean, Director of Graduate Studies, University of Hawaii, Honolulu, Hawaii.
Thomas B. Vance, Principal, Hilo Junior High School, Hilo, Hawaii.
Richard E. Meyer, Principal, Hilo High School, Hilo, Hawaii.
Harold Loper, Principal, Lihue High School, Lihue, Hawaii.
C. E. Crawford, Principal, Konawaena High School, Kealakekua, Hawaii.
Miles E. Cary, Principal, McKinley High School, Honolulu, Hawaii.
Alton H. Rogers, Principal, Lahainalua High School, Maui, Hawaii.

**Hilo Chamber of Commerce:**
George H. Godfrey, Tribune-Herald, Hilo, Hawaii.

**Institute of International Relations of Pacific Coast:**
K. C. Leebrick,
Director, Institute of International Relations, Riverside, Calif.
University of Hawaii, Honolulu, Hawaii.

**Institute of Pacific Relations:**
J. Merle Davis, general secretary,
Institute of Pacific Relations
Honolulu, Hawaii.

**Jewish Welfare Board:**
A. E. Linzeer,
Jewish Welfare Board, Honolulu, Hawaii.
C. W. Spitz,
Box 2320, Honolulu, Hawaii.
J. M. Levy,
68 King Street, Honolulu, Hawaii.
M. B. Goldmann,
1630D Liholiho Street, Honolulu, Hawaii.

**League of Women Voters:**
Mrs. Chauncey J. Hamlin,
1014 Delaware Avenue, Buffalo, N. Y.

**Maui Chamber of Commerce:**
W. O. Aiken,
Haiku, Maui, Hawaii.

**National Board of Young Women's Christian Associations of America:**
Mrs. Katherine W. Eddy,
Y. W. C. A., Honolulu, Hawaii.

**National Catholic Welfare Conference:**
John A. Hughes,
O. R. & L. Co., Honolulu, Hawaii.

**National Conference on Outdoor Recreation:**
Chauncey J. Hamlin,
1014 Delaware Avenue, Buffalo, N. Y.

**National Educational Research Association:**
Robert S. Speneer,
2356 Vancouver Highway, Honolulu, Hawaii.

**National Congress of Parents and Teachers:**
Mrs. A. H. Reeve, President,
National Congress of Parents and Teaehers, Philadelphia, Pa.

**National Council of Administrative Women in Education:**
Miss Lucille Hodgins,
Ewa, Oahu, Hawaii.

**National Student Federation of the U. S. A.:**
Miss Laura Thompson,
Box 1920, Honolulu, Hawaii.

**New York Botanical Gardens:**
Otto Degener,
University of Hawaii, Honolulu, Hawaii.

**Pan Pacific Union:**
C. Ligot,
560 South Queen Street, Honolulu, Hawaii.

**Playground and Recreation Association of America:**
Austin E. Griffin,
Seattle, Wash.

**Prairie Club of Chicago:**
Miss Margaret Bergen,
Seeretary, Associated Charities, Honolulu, Hawaii.

**Society of American Foresters:**
C. S. Judd,
Territorial Forester, Honolulu, Hawaii.
T. C. Zsehokke,
Assistant Territorial Forester, Honolulu, Hawaii.

**World Association to Promote Student Ministry to Children:**
Robert G. Boville,
Calcutta, India.

**World Federation of Education Associations:**
Mrs. William H. Beers,
Hilo, Hawaii.

**Wyoming State Teachers Association:**
Mrs. James R. Coxen,
531 Hotel Street, Honolulu, Hawaii.

**Zionist Organization of the World:**
Geıshon Agronsky,
Box 625, Jerusalem, Palestine.

# PROGRAM

*Tuesday, April 5*

Reception of delegates arriving from the United States and other countries.
Drive around Honolulu.

*Wednesday, April 6*

10 a. m.—Visit of the Secretary of the Interior to the Legislature of Hawaii.
12 m.—Luncheon given by the Honolulu Ad Club.
8 p. m.—Community meeting at Lihue, sponsored by the Kauai Educational Association and other organizations.

*Thursday, April 7*

10.15 a. m.—Visit to the cannery of the Hawaiian Pineapple Co., Iwilei.
11.45 a. m.—Luncheon, guests of the Hawaiian Pineapple Co.
12 m. to 2 p. m.—Garden exhibit of the Eleventh Annual School and Home Garden Contest.
2 to 4 p. m.—Flower Festival and Pageant of the Races.
8 p. m. Meeting of the vocational education section of the Hawaiian Educational Association.

*Friday, April 8*

10 a. m. to 1 p. m.—Review, reception, and luncheon at Schofield Barracks.
3.30 p. m.—Visit to the sugar plantation at Waipahu.
7.30 p. m.—"American-Japanese Friendship Program" at Mission Memorial Hall.

*Saturday, April 9*

Visit to the island of Molokai.
Registration of delegates.
4 to 6 p. m.—Tea, Washington Place, in honor of the women delegates and ladies of the delegates to the conference.

*Sunday, April 10*

3 to 6 p. m.—Interracial Festival, Pan Pacific Research Institute, Manoa Valley.

*Monday, April 11*

9.30 a. m.—Formal opening session of conference, ballroom, Royal Hawaiian Hotel.
Address of welcome, Hon. WALLACE R. FARRINGTON, Governor of Hawaii.
Opening address, Hon. HUBERT WORK, Secretary of the Interior, and general chairman of the conference.
Responses from each country represented, and presentation of delegates.
Appointment of committees and announcements.
12.30 p. m.—Organization luncheon, Royal Hawaiian Hotel.



MILITARY REVIEW AT SCHOFIELD BARRACKS

2 p. m.—Sectional Group Meetings:
Educational Group—
Chairman, John J. Tigert, Commissioner of Education.
Reclamation Group—
Chairman, Elwood Mead, Commissioner of Reclamation.
Recreation Group—
Chairman, Stephen T. Mather, Director of the National Park Service.
5 p. m.—Sports on beach before Royal Hawaiian Hotel by Honolulu Recreation Commission.
7 p. m.—Banquet by Governor and Mrs. Wallace R. Farrington at the Royal Hawaiian Hotel, in honor of Hon. Hubert Work, Secretary of the Interior.
9 p. m.—Reception by Governor and Mrs. Wallace R. Farrington at Royal Hawaiian Hotel, in honor of Hon. Hubert Work, Secretary of the Interior, and delegates.

*Tuesday, April 12*

9 a. m.—Sectional Group Meetings.
2 p. m.—Sectional Group Meetings.
4 p. m.—Tea to the women delegates and ladies of the delegates at the residence of W. R. Castle on Tantalus.
8 p. m.—Education Program, Central Grammar School.
General assembly of teachers, with addresses by Mrs. A. H. Reeve, S. H. Smith, N. Murakami, Salvador Novo, and John J. Tigert.

*Wednesday, April 13*

9 a. m.—Sectional Group Meetings.
2 p. m.—Sectional Group Meetings.
4 to 6 p. m.—Academy of Arts open to delegates.
8 p. m.—Film programs at Mission Memorial Hall and the Royal Hawaiian Hotel.

*Thursday, April 14*

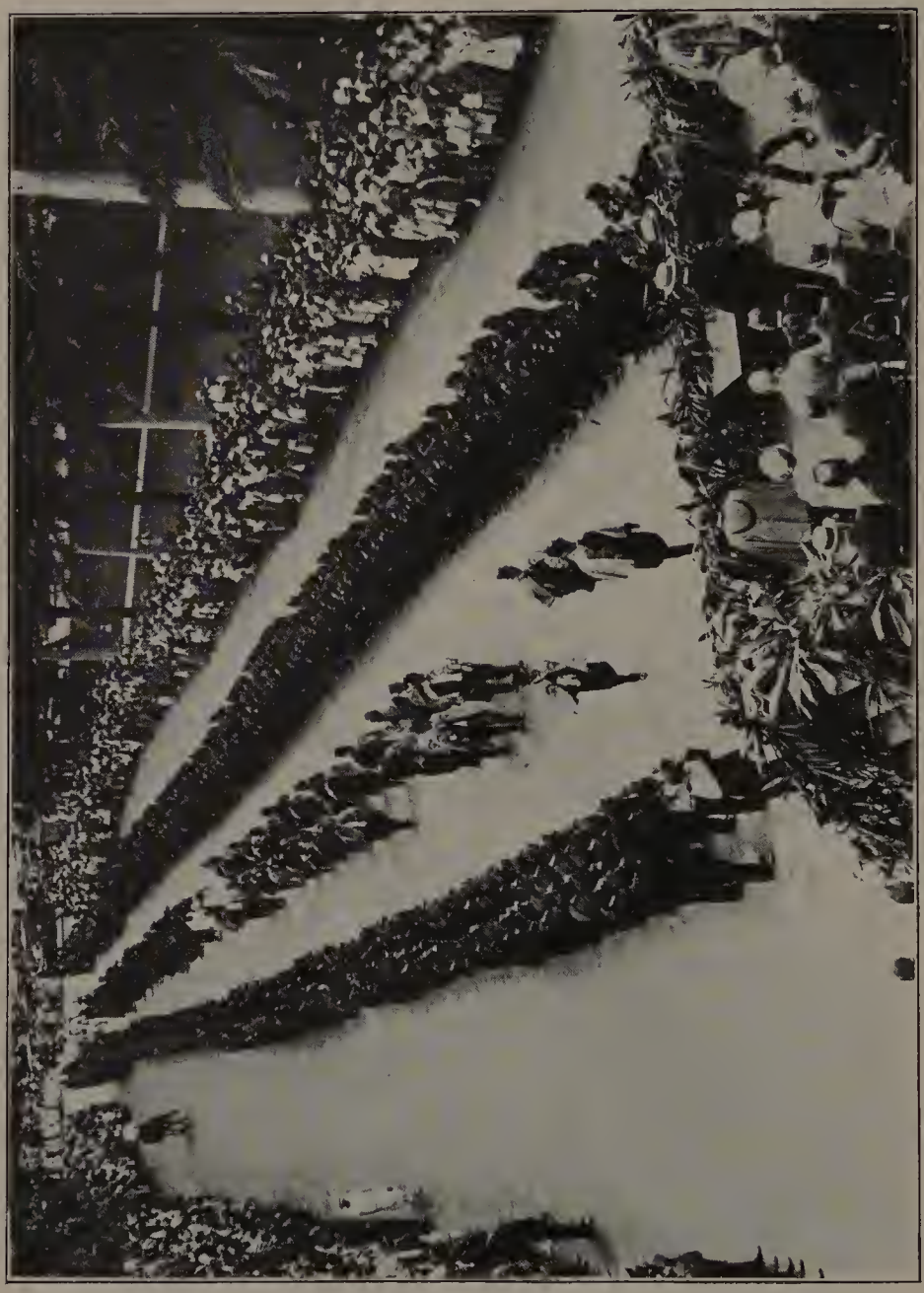
9 a. m.—Sectional Group Meetings.
2 p. m.—Sectional Group Meetings.
9 p. m.—Dance, Royal Hawaiian Hotel.

*Friday, April 15*

8.15 a. m.—Leave hotels for trip around island of Oahu as guests of the Chamber of Commerce of Honolulu.
1 p. m.—Luncheon, Haleiwa Hotel, as guests of the Chamber of Commerce of Honolulu.
Evening open.

*Saturday, April 16*

9 a. m.—Formal closing session of conference, ballroom, Royal Hawaiian Hotel.
Reports of committees.
Resolutions.
Adjournment.
1.30 p. m.—Parade by Order of Kamehameha and other Hawaiian orders.
Parade from Aala Park, through King Street to Kamehameha statue at Judiciary Building, encircling statue, thence to Capitol grounds, passing reviewing stand, on front steps of Capitol.
Boy Scouts will handle traffic in Capitol grounds.



PARADE OF THE ORDER OF KAMEHAMEHA

4.30 p. m.—Order of Kamehameha, Luau.
Held in the grounds of the Kamehameha Girls' School.
7.30 p. m.—Pageant and Hawaiian evening at Piers 7, 8, and 9 by the Order of Kamehameha.
Dancing, second floor of Piers 8 and 9.
12 Midnight.—Leave by steamship *Calawaii*, from Pier 16, for island of Maui.

*Sunday, April 17*

6 a. m.—All day on island of Maui.
Program arranged by Maui Chamber of Commerce.
10 p. m.—Leave Maui for island of Hawaii.

*Monday, April 18*

6 a. m.—Arrive Hilo, Hawaii. Program arranged by Chamber of Commerce, Hilo.
Evening.—Leave for Volcano House at Kilauea National Park. Spend night at Volcano House.

*Tuesday, April 19*

8 a. m.—Leave for various side trips about Kilauea National Park and Volcano. Lunch at Volcano House.
4 p. m.—Sail from Hilo for Honolulu, by steamship *Calawaii*.

*Wednesday, April 20*

6 a. m.—Arrive Honolulu.
10 a. m.—Steamship *Wilhelmina* sails for San Francisco.

# *FIRST PAN PACIFIC CONFERENCE ON EDUCATION, RECLAMATION, AND RECREATION*

## *Honolulu, Hawaii, April 11 to 16, 1927*

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### *PLENARY SESSION*

*Monday Morning, April 11, 1927*

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The conference was called to order by the Hon. Hubert Work, Secretary of the Interior and general chairman of the conference, in the ballroom of the Royal Hawaiian Hotel at 9.30 o'clock.

### *ADDRESS OF WELCOME*

*By Hon. Wallace R. Farrington*
*Governor of the Territory of Hawaii*

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Education has been defined as a process of adjustment to new environment.

Generally successful and prosperous as Hawaii has been for many generations, education has made clear the pathway of its progress.

Enjoying an enviable reputation for fostering new friendships between peoples and among nationalities slightly acquainted, Hawaii has had a happy way of assisting in making the way easier for adjustments to new environments. Records of the past and the conditions of the present confirm our status as one of the interesting and unique proving grounds of a rapidly developing world.

This apparent touch of self-praise is rather an expression of enthusiasm that one has from knowing the makers of history who have solved problems in this laboratory of interracial humanities.

Education has sharpened our wits and broadened our vision. Reclamation has made fields fertile that were once barren wastes. Acting and reacting under the direction of alert minds, those forces that organize men, minds, and material have made possible the leisure and recreation that conserve energy for the next task.

A few years after the explorer, Capt. James Cook, touched at these islands, Opukahaia, a Hawaiian sailor lad, who had visited the seaports of New England, appealed to friends in the college town of New Haven that they should carry their education, their gospel, to his people, whom he believed would readily accept the inspiration of the new faith, as he had done. A great missionary movement was started. Its progress is evident to this day and will continue to influenee the life of peoples of the great Pacific area through generations yet to come.

Up to that time, Honolulu, and the island of Hawaii, had been a haven for whalers, traders, the sea dogs of commerce and exploration. These rovers gave occasional samples of the reckless abandon with which men may conduct themselves when coming in contact with a new people.

The American and European missionaries centered their efforts on the best means of adjustment to the new environment. The native race responded in kind, with the result that in 1826 it is recorded that there were 400 native Hawaiian teachers within the islands and fully 30 per cent of the population were attending school. Why the great revolution could be accomplished peacefully is better understood when we know that religious tolerance and racial tolerance dominated the edueational ideals. This saved the situation. It prevented the traditional "inevitable result," where barbaric feudalism in government, with tools and weapons of the stone age, came in eontact with the adventurous eighteenth century spirit of Spain, Britain, Portugal, France, China, and New England, whose explorers, whalers, and merchantmen went in seareh of new lands, new markets, and new experiences.

According to the rules of the game as played in many parts of the world 100 years ago, the native race was due to be pushed baek by sheer physical force and crumble helplessly under the advanee of eastern and western civilizations. The Hawaiians, however, showed great wisdom and a native capacity for adjustment to new environment. The missionary leaders set about immediately to develop the tools of understanding and exchange of thought. The native language was redueed to written form. Much has been said of the vast numbers who aeeepted the new spiritual faith. They eagerly sought better equipment for learning more rapidly. These islands of Hawaii were one vast schoolhouse, with the royal family and the high chiefs among the first to learn to read and write. There was a great evangelical desire to gain the education of the day school as well as the Sunday sehool. The high percentage of literacy then established has been maintained among all races to this day.

You have heard of the proud record of Kamehameha I, the leader who eonquered and consolidated the native peoples of Hawaii. You

should also know of the other great monarch, Kamehameha III, under whose leadership the transformation from barbarism to modern civilization came about. This was done without loss of life or of prestige, without sacrifice of personal or national independence. Kamehameha I killed to conquer. Kamehameha III convinced his people and conquered the prejudices of the period. Free government thrived, and an aboriginal people took its place as an equal in a new and advancing civilization.

The Hawaiians had their public works, crude irrigation ditches, rough temples, recreational sports, and special sections for the kings and chiefs to spend a vacation season. They were very normal human beings, strong in character; woefully weak, however, in any form of physical defense with which to successfully defend themselves from any warlike attack by forces armed with the guns and bayonets of that period.

The people of these islands so rapidly adjusted themselves to new environments that they advanced in a period of 35 years from feudalism to constitutional government and organized a nation that commanded the respect and received formal recognition of the diplomatic courts of the world. The king voluntarily granted his people constitutional government, limiting his own authority. Lands were divided among the people in areas large enough to maintain a family home. Representatives of the people were elected to a council or legislature, where laws were made, to be interpreted in well-organized dignified courts.

President Coolidge has said that prosperity is not a cause, it is a result.

Under the influence of the rapid progress of education, which was a peaceful process of adjustment, men had time to turn their thoughts to a variety of gainful occupations. They made wider use of natural resources. Virgin forests, denuded of sandalwood for the oriental trade, furnished an early and sad lesson in devastation and lack of conservation. The whaling industry waned. Then the people turned to tilling the soil. Expanding agricultural industry required additional labor. Chinese were brought to the islands, numbering 30,000 or more. Orientals had figured in the affairs of the islands to a limited extent for many years. The coming of the laborers called for adjustments of a new population in the mass. A new problem was presented.

It is well to note that throughout all this formative period religious tolerance and racial tolerance prevailed. There was social equality of all races in the schools and in public life. This included intermarriage among the races without loss of caste. Self-respect and the ability to be a good neighbor was the test of good citizenship.

Growing industry again called for more men to labor in the field and cane sugar factory. Families from Portugal, approximately 40,000 to 50,000 souls, were brought to the islands to labor in the fields, make their homes, and adjust their Latin traditions to this environment.

The march of industry then enlisted Japanese, who came in larger numbers. Still later some 8,000 Koreans arrived. Five thousand Spanish followed. South Sea islanders were included in limited numbers. Russians came and went. A few families from Norway, Germany, and Galicia were among the assisted immigrants arriving previous to 1900. The latest infiltration of new blood is from the Philippines. Over 50,000 Filipinos are resident in Hawaii. The majority of these people have come to these islands within the last 10 years.

One can readily agree that there was enough mixture of human cross currents in these waves of assisted and unassisted immigration to have brought to these shores and put in full swing all the trouble, contention, race bigotry, and rebellious antagonism that history records to have been associated with the wanderings of the human family in other parts of the world. The difficulties our people had to meet were self-evident.

The traditional troubles were not realized as might have been anticipated. With exception to prove the rule, peace has reigned.

Political control swayed between parties; the governmental changes took place. There was no change, however, in the guarantee of free schools, free speech, freedom of religious thought, and freedom from racial discrimination, unless it was the change of normal growth that perfected the guarantee and made it more universal. It was early evident that Hawaii could not have weathered the stress of modern competition had it attempted to hold its own as an independent unit among the nations of the world. Whether it was the direction of a Divine Providence or the good fortune of a kindly fate, the choice made by the people of the islands to join themselves as an independent unit of the great Republic, with which they were closely associated, made possible the uninterrupted progress of the racial and educational experiment.

Industry prospered, education thrived. While the complaint was being registered that education was drawing boys away from work, the discoveries made in the laboratory and the field were being used to increase land yields; machines took the place of back-breaking labor; and water, hitherto running to waste, was diverted so that desert land brought forth abundantly. Thanks to education, slipshod methods were abandoned. The old spirit of adventure found new rewards in solving the mysteries of soil content and plant life; it sought to discover the gains that could be made through chemical

reaction; and how waste might be turned to wealth through feats of civil and mechanical engineering. Education also came in to improve the condition of the home. The process of adjustment to new environment was facilitated and was made increasingly popular by the larger number of independent homes, where healthy children with their improved opportunities added to the economic strength as well as the happiness of the community.

The very isolation of these islands has proved of the greatest value in making this a perfect laboratory. The process of adjustments could go on normally and with a minimum of outside interference. By the incident of physical geography we have been forced to work out our own salvation.

Hawaii has received new blood from all directions. Our period of assimilation among different races runs back nearly 100 years. As a result Hawaii has radiated influence that deserves thought from those interested in what the interracial contacts of daily life and the climate of the Tropics do to human energies and ambitions.

Hon. Hiram Bingham, successively elected Lieutenant Governor and United States Senator from the State of Connecticut; Hon. William R. Castle, jr., Undersecretary of State for European affairs; Hon. George F. Davies, member of the British Parliament from the constituency of Yeovil, England; and the late Dr. Sun Yat-Sen and his son Sun Fo, the present mayor of Canton, are among those born and reared in Hawaii whose names stand out as national and international figures. Their elementary-school training was obtained in these islands. They are products of the Hawaiian environment. The pioneer spirit was not dulled by life under the Tropic of Cancer, nor was their progress checked by free mingling with other races. Records made by these men and many others furnish a new slant on the old idea that mental and physical vigor deteriorate in the warmer climates and under conditions where racial caste is reduced to a minimum.

Polynesian, oriental, and occidental have blended under the influence of tolerance and the enlightenment derived from books, public schools, and a wider acquaintance through the more general travel abroad of all peoples.

Relieved of the suspicion and the prejudice that retard, our population has been free to devote undivided attention to the study of industrial development and domestic improvement. Lands within a few miles of our present meeting place have produced over a period of years the largest yields of sugar cane per acre thus far known in any cane sugar growing region of the world. While touring through the miles of luxuriant fields of sugar cane on this island of Oahu it is well to remember that nearly all the sugar cane on the island is grown by aid of irrigation. The greater portion of the water comes from artesian wells. There are 41,264 acres of irrigated sugar-cane lands

on this island and 46 acres of nonirrigated lands. The amount of water distributed over these acres from artesian wells, ponds, and mountain streams totals 465,000,000 gallons in each 24 hours. The investment of private capital in the irrigation plants and equipment totals $10,302,000. One of the sugar plantations that delegates will visit on this island returned a crop of more than 60,000 tons of cane sugar in 1926. The average yield per acre for the whole area harvested was slightly more than 10 tons per acre. Less than 20 years ago 10 tons of sugar per acre for an area of 100 acres was the world's record yield.

These results are largely products of private enterprise under the general national policy of tariff protection and education.

The government as represented by the Territorial administration, acting under authority of laws passed by the United States Congress, has undertaken the settlement of lands in small areas. We have had a great variety of enterprises under the general title of homesteading. The latest and most successful is that carried on under the Hawaiian homes law, whose framers drew from the experience of Australia and various parts of the United States for approved methods of rendering assistance to small farmers without excessive paternalism. The homes commission development, inaugurated on fertile fields of the island of Molokai, provides home tracts varying from 20 to 40 acres, with loans to homesteaders from public funds at a low rate of interest, with 30 years for repayment of the principal. Town lots in the vicinity of the city of Hilo have utilized waste land in getting Hawaiian families out of tenements.

Our great natural wonders, the active volcanoes of Kilauea and Mauna Loa, and the largest extinct crater in the world, Haleakala, have been transferred by the Territory to the Federal National Park Bureau. In addition to these projects, now controlled by the National Government, the Territorial and municipal governments have consistently maintained the policy of reserving public lands as requested so that they may be used as breathing spots in the cities and recreational areas in the mountains or on the beaches.

Hawaii has had experience in education, reclamation, and recreation.

I have reviewed what many have termed the miracles of our friendly relations among peoples of divergent ancestry because there is so much in our history and present-day condition that parallels situations in this Pacific area and other parts of the world where some very capable men and women, suffering from fits of depression, declare that adjustments on a mutually satisfactory basis are impossible. Looking back over our experience, we of Hawaii make bold to believe that all these things are possible. Here the achievement of old-time impossibilities has become an incident of ordinary routine and an inspiration to renewed effort. We believe that what has been

done here may be accomplished on a larger scale within the circle of which Hawaii is a strategic commercial and cosmopolitan center. What has been done here will be repeated in its general outline in other parts of the world where good moral standards, good public schools, and a reasonable amount of tolerance prevail.

This outpost is a friendly meeting place of the peoples of the Pacific, a natural center for representatives of the nations of the Pacific to meet for conference on those matters that are especially associated with the arts and pursuits of peace.

We appreciate the honor of receiving and entertaining this the first conference called in this part of the world to exchange opinions and experiences on peculiarly domestic problems—the education of our children, the establishment and maintenance of our homes, the cultivation of our fields, arousing and pointing the way to the youth so that their studies in the schools shall not head them away from the vocations that improve the standards of industrial enterprise and the cultivation of small farm areas.

We have great natural wonders, well worth the while of people to travel thousands of miles to enjoy. Every nation bordering on this ocean has attractions that lure the traveler to continue on. We may improve our own conditions and help each other by promoting travel so that our historical landmarks shall be better known, our people better acquainted, and our conditions considered with more sympathetic understanding.

Our adjustments to environment will be easier when the teachers among the nations pass to and fro under a program of exchange that will broaden the outlook and balance the judgment of youth in our schools, colleges, and universities. Our mutual prosperity will be greater when we gain from others new light on old problems, something that may be carried home to aid the many domestic projects included under the general title of making more homes happier.

It is our sincere desire to interpret to you, Mr. Chairman and the delegates to the Pan Pacific Conference, the traditional aloha of Hawaii nei, in such terms that you will be convinced that the languor and beauties of the subtropics are an aid rather than the proverbial deterrent to serious thought. Our endeavor will be to give you every favorable surrounding, as we have endeavored to do for the representatives of many races and nationalities now making their permanent homes here.

We sincerely hope that the Territory of Hawaii may be able to do its fair share toward assuring permanent conferences of this character that shall give to all peoples a more active interest in education as defined by a process of adjustment to environment. Friendship has been the keynote of our adjustments in this Territory. Under the influence of this conference, we look forward to this friendly spirit




OPENING OF THE SESSION (HON. HUBERT WORK, HON. WALLACE R. FARRINGTON, RAYMOND BROWN, AND K. C. LEEBRICK)

expanding to and permeating all parts of the Pacific area. Thus we shall reach new goals in intelligent citizenship and neighborly spirit, and gain new power in the performance of a pleasant duty.

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Secretary Work read to the conference the greetings of the President of the United States:

THE WHITE HOUSE,
*Washington, D. C., March 12, 1927.*

MY DEAR MR. SECRETARY: Will you please extend my greetings and welcome to the delegates from the countries represented at the Pan Pacific Conference on Education, Rehabilitation, Reclamation, and Recreation, which it has been my very great privilege to call.

It is a pleasure for the United States to receive them in Hawaii, one of the outposts of our country, and to join with them in the deliberations. I firmly believe these discussions will result in a more thorough understanding of the problems coming within their scope which are common to all the countries and possessions bordering on the Pacific.

More than half the people of the world inhabit countries touching on that ocean, and 80,000,000 live on its islands. Its commerce has grown tremendously in the past century and its ports now rank with those in other parts of the world. Ships and cables and the radio all have brought its peoples into more intimate contact.

This increase in communication, and in the closeness of the relations one with the other, has made it both appropriate and desirable that there should be found means for mutual helpfulness.

As cooperation between the various agencies interested in the matters which are to claim your attention has proved most effective in the United States, it should be equally helpful to establish such relations among all the Pan Pacific countries. I am sure our country may learn much of value from the research, practice, and experience of others, and I hope we may contribute our full share to the general good.

Each nation has its own traditions, its own customs, and own ideals; but more and more we are coming to realize that human problems are much the same the world over. Whatever may be done at the conference to promote the peaceful arts and pursuits, and to make the individual healthier and happier in his home and national life, will be a worth-while contribution to civilization.

Very truly yours,

CALVIN COOLIDGE.

Hon. HUBERT WORK,
*Chairman Pan Pacific Conference on Education,*
*Rehabilitation, Reclamation, and Recreation,*
*Honolulu, Hawaii.*

## *OPENING ADDRESS*

*By Hon. Hubert Work*
*Secretary of the Interior*

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This Pan Pacific Conference has been called by the President of the United States in conformity with a joint resolution of the Congress, and the sessions now begun are to be held under the auspices of the Department of the Interior.

By invitation of my Government, representatives of the countries bordering on or having territorial possessions in the Pacific Ocean have been given an opportunity to participate. There is a mutuality of interest involving the people of all these nations, and I am conscious of the privilege of sharing in this meeting with our sister nations, whose learned men and women are directing their powers toward constructive and peaceful ends.

The basic purpose of this conference is to promote the advancement of peaceful arts and pursuits among the countries participating, to interchange knowledge on subjects of mutual interest, to broaden our vision, and improve our social and economic intercourse. It embraces the interests of all the Pacific peoples for their own good and the welfare of the countries they represent.

Coordination of ideas and ideals of economic progress will enable us to advance on common ground toward a common end, with equal opportunity alike to all nations.

Our faith in civilization, our love of liberty, and our belief in the liberal institutions so beneficial to society, which we and other great civilized lands of the earth have acquired at costly sacrifices, teach us that we must school ourselves never to minimize the obligations our respective countries owe to each other to perform every service which profound statesmanship requires of an enlightened era.

No world power to-day may remain in isolation or escape the tide of modern advancement. The difference in physical and climatic conditions and the variety in intellectual and social progress among nations would seem to ordain a policy of independence between them, but there is nevertheless a mutuality of international interest. Each nation, for the benefit of its people, must of necessity deal with its own problems of fiscal policy, trade and commerce, and the attitude of government toward industrial enterprise. Yet certain features of individual and national life are susceptible of general application. The general treatment of economic ideas and doctrines by friendly powers, which we expect at this conference, can not but contribute to the hopes and aspirations of all the peoples of the Pacific whose national destiny is influenced by modern thought.

Earnest men and women have come to understand that the progress of society is achieved by the practical application of knowledge. They strive by individual and collective effort to prevent and correct evils in a national sense quite as much as in purely a local sense. The social structures of nations are subject to reinforcement from without as well as within. The blight of centuries has been the inclination and policy of nations to pursue a separatist policy, ever viewing their own economic and social development at a cost, usually, of the progress of their peoples rather than in the interest of the progressive improvement of the human race. So long as these national forces operate in opposite directions, intent upon separate national interest and existence, material progress will be delayed.

The Pacific is a great combination of geographical, ethnological, and political factors, extremely diverse, but within them there is a spirit of human commonalty that encourages persistent efforts toward the germination of new and exalted ideals of civilization.

In our essential equipment for participation in the world's work, intercourse, environments, and traditions are phases of intellectual and emotional activity which inspire us. Words and combinations of words difficult to pronounce are avoided for the sake of euphony. Likewise, discordant theories and practices should give way to clarity of ideals and definite purpose. The cultured mind of a people will unconsciously express itself worthily, and as we attain higher intelligence our acts and our aspirations are molded into permanent form, awaiting only opportunity for practical application.

The romance of the Pacific is an enduring heritage from distant ages. Where for two and a half centuries a single galleon made its slow way forward and backward from Acapulco to Manila once a year, we to-day are unmoved by the magic of human invention which shuttles giant steamships across the Pacific between America and Asia in a few days. Ships touch daily along coastal reefs, unite the islands and mainlands, or ply between great foreign ports. Little less than a century ago vessels timorously rounded Cape Horn, steering toward the setting sun, and rarely did they return before the lapse of years. But within the last half century the evolution of the scientific spirit and the improvement in navigation has set afloat thousands of ocean-going steamships, crossing bows and weaving their way into every commercial port of the Pacific.

Balboa, Magellan, and Drake roamed the Pacific out of sheer love of adventure. Yet, they were evangels of progress. For ages the movement of the human family has been westward. In this westward reach for a habitat and happiness, race has overwhelmed race. Yet, withal, civilization itself and the economic center of the civilized world with it have ever moved steadily westward, from Carthage to Italy, to Holland, to England, crossing the Atlantic, spanning our

continent—to the Pacific. Once all nations clustered about the Mediterranean; then the Atlantic became the pathway of international intercourse; now the greatest of the world's waters—the new Pacific—is the center of the world's currents of progress.

The significance of the Pacific, in a westward voyage, is not lost on the human mind, for in traversing this half a world of water, we reach the opposite continent—and Asia, the birthplace of the human race.

The kinship of peoples scattered over the 70,000,000 square miles of Pacific seas becomes evident in the way in which they lend themselves to fusion with modern scientific progress. Perhaps in time, if our progress and development be not impeded, the many tongues now spoken on the thousands of islands in Pacific waters will give way to a simple and flexible language spoken in every inlet of the seas.

One-half of the human race lives in countries bordering on and in the Pacific. Oriental life is found on our Pacific seaboard, as American life is found on the Asiatic side. To the south, among the islands of the Antipodes, or north of the Equator, here in Hawaii, we find a constant interchange of racial relations. This Pan Pacific Conference is happily a reunion of friendly nations and peoples. Your sons have studied in our schools and universities; they have contributed to our mechanical, material, and social growth; they have fought under our flag. We have come to Honolulu, our frontier in the Pacific, on a mission of amity. We would counsel and be counseled. We believe that international cooperation, assiduously observed, will do more to found mutual happiness and justice than all the theories evolved through the centuries.

Nowhere is the evolution of events which portend progress more in evidence than in and around the Pacific Ocean. This vast sea is now one of the world's highways of commerce, and its industrial progression is challenging the attention of practical minds. It is taking its strategic place as the largest of oceans, its commonwealths among other commonwealths, its commerce among all commerce of the world.

Nowhere on the globe is found so many groups and such an innumerable number of islands, in size from up-shooting rocks to the island continent of Australia. The untouched wealth of the Pacific invites a new spirit of exploration, for here we find climates of all variety, soil of all kinds, riches in every form.

The representatives of the United States are here assembled to learn and to impart what may mutually be beneficial to all countries alike. Though the distinguished delegates to this conference may have a full knowledge of America's development—from the hazardous days of our early colonization until the present—yet I feel my mission would be inadequately fulfilled were I not to indicate our

material progress and aspirations, ever so briefly, for the purpose solely of advising you of what we ourselves have done, and what we hope to do, aided and encouraged by this interchange of national thought.

Within the span of little more than a century the United States has progressed through the perpetuity of high ideals founded upon a modicum of training handed down from generation to generation. Prudence and industry have been the guiding spirit. In our East, great commercial centers thrive; the plantations of our Southland, the plains of our West, the mountains of our Pacific coast, have responded to individual and collective initiative. High valuation indeed must be placed upon such initiative. Without it there could have been no transition period, no science of business or government administration. With increasing force the knowledge comes to us that directive intelligence is becoming more and more essential to successful enterprise.

We hear a great deal about centralization of executive power. There always has been, there always will be, some central authority in the fixation of governmental dominion, though I do not by this mean to subscribe to the theory that such centralization of power should carry with it mandatory control or supervision of the rights of individual States. In this struggle for free government and the placing of responsibility we have come through the years to realize that in organization lies the safety of the human race, the sanctity of national life.

The permanency of the national life of a people depends basically upon human ingenuity and the capture and practical conversion of all available natural resources. Singularly, though not strangely, nature has secreted many of her most useful resources in forbidding places, but the genius of man continuously triumphs over nature. New elements are being introduced into the life of the time and new adjustments are being made necessary. During the last century an industrial revolution has affected agriculture, manufacture, transportation, and commerce. Modern nations no longer are countries of small freeholders with open-field tillage. To-day we have in every quarter of the globe modern agricultural nations, with inclosed fields, rotation of crops, improved farm implements, and advanced methods of cultivation. Handworkers and small establishments have given way to great factories. Improved highways, rail, river, and canal commerce are contributing with amazing prodigality to national advancement.

One of the major subjects for discussion before this conference invo ves reclamation, that modern science of engineering upon which depends the productivity of much of the earth's tillable lands. In

the United States our reclamation progress during the past quarter of a century has been epochal. Our conquest of the desert by inland rivers is a chapter in reclamation history which makes us proud of our progress in conservation.

But while we in America were striving for the full benefits of modern reclamation, Australia, the sixth continent of the world—for indeed its area approximates that of the United States—was responding amazingly to the engineering skill of a great builder. That engineer to-day is the directing head of the reclamation forces of the United States Government.

Education and its applicability to human progress constitutes the important phase of our program at this conference. Modern peoples expect to form, strengthen, and express their national ideals largely through education carried on in public-school systems. In our meetings we shall consider those international aspects of education which relate to exchange of educational thought between nations, standards of child life, and vocational training.

No country has a school system that is entirely of its own making. All have borrowed from others. Our school men and women acknowledge their debt and express their gratitude to the great educational leaders of older and modern Europe. Other nations are sending their experts to us to study our school systems. We hope they will find things of value that they may adapt and use. Civilization owes much to the freedom with which schemes for human training have been carried from country to country.

These exchanges of educational thought are growing rapidly in volume and importance and taking on many different aspects. Over a hundred organizations either within or without the regular colleges and universities are at work in the United States promoting some phase or other of international intellectual cooperation. Fellowships and scholarships for Americans to study in other countries are offered annually, totaling a half a million or more of dollars. Foreign students are brought to us to study in our institutions or gain experience in our business establishments. From two to three thousand non-quota students are coming annually to our schools. Summer schools for foreigners are now commonplace in European countries. Even a university afloat is making a round of the world in order that students may know many countries by actual contact, not from books.

It seems proper for this conference to survey all these activities and to consider how they may be fostered and rendered more effective for the nations of the Pacific. The educational publications of each of our countries should be made quickly and easily available in all. The students who go from one country to another are for the most part earnest young people whose time is valuable. Some standards

of credential acceptance and evaluation need to be set so that these foreign students may work to their own advantage and the satisfaction of the institutions they enter.

This national business of education has developed a general appreciation of the value and the rights of child life. We recognize that every child should be well born, and that mothers and infants must have proper care. Both the welfare of the state and that of the child require that he be given a certain number of years of instruction and that his body be strong and sound. We of the Pacific can not afford to permit our populations to be any less literate or less physically sound than those of other countries. It will be well to consider at this meeting how we may best and most quickly improve our standards of literacy and physical fitness.

Our host, the Territory of Hawaii, recently entered upon the policy of extending vocational education which was begun in other parts of the United States and in Canada about a decade ago. The old and often effective plan of training for the vocations through apprenticeships, separate and apart from the schools, can not supply, either in quality or numbers, the workers needed in modern industry. The school systems must of necessity broaden their offerings and their activities to include training for industry and the direction of the pupils into work in line with their desires and abilities. In establishing the program of vocational education, the Governor of Hawaii wishes to profit by your experiences and to learn from you what to do and what to avoid. I am sure you have much to offer him. Beyond this specific interest, the general question of the place of vocational education in the general educational program is to be considered.

We have finally to consider those schemes, many of which bring really remarkable results, for restoring the disabled to self-support and self-respect and reducing to a minumum the unhappiness that may result from unavoidable accident. Prevention is better than cure; but industrial accidents, though reduced to a minimum, will always occur, and methods of cure or rehabilitation should be available.

Recreation, of importance on our agenda, undoubtedly will be given profound consideration, for here, too, is a vital relative factor in the mental, physical, and spiritual life of nations. All countries, all habitable centers in all parts of the world, to-day are directing thought upon the problem of public parks, playgrounds, and the development of athletics. A healthy and progressive people are inspired by environment and right-living conditions, and if relaxation and recreation are injected into the daily routine of our lives it enables broader and clearer vision, more happiness, and a more wholesome spirit to go forward in confidence with courage.

With all of these subjects of common interest before us for free discussion the conference should evolve foundation principles which

will make the occasion internationally historic, and I now declare the Pan Pacific Conference opened for the purposes for which it was called.

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Raymond C. Brown, secretary of the Territory of Hawaii, called the names of the delegates from the various countries and invited them to the platform, where he introduced them to the conference.

S. H. Smith, undersecretary and director of education of New South Wales, on behalf of the Australian delegation said:

"We come to-day bearing messages from that great land of the southern seas, Australia; a land of extended plains, of mountain ridges, of flowers and gardens; a land of far horizons, guarded by silver seas. That great land sends to you, sirs, its hearty greetings and its best wishes for the success of this conference. Our educational field is the same as yours and our main duty is to send out into the social, political, and economic life of the community a steady stream of young men and women ready and equipped to assume their allotted duties, even in the remote parts of the country. But we are beginning to realize that there is a much higher form of patriotism, which must be considered by our educational institutions, and that is tolerance for other nations and love and respect for other peoples. And so we heartily combine with you in the wish that this great conference may tend toward these ends."

Islay McOwan, Secretary for Native Affairs, responded on behalf of Fiji and the British western Pacific as follows:

"I desire very greatly and heartily to convey to you the thanks of the Government of Fiji and the British nations in the western Pacific for the invitation to participate in this conference. I also desire to thank you, sirs, for the message of welcome which you have read this morning to the delegates and for the cordial welcome we have received."

Gerald Hastings Phipps, British consul at Honolulu, on behalf of Great Britain, responded as follows:

"Great Britain was unfortunately not able to send special delegates to this conference, so the lot has fallen to me to represent Great Britain. I appreciate the honor of appearing at this conference. As you know, Great Britain's connection with these islands has been a long one. In his address, Governor Farrington mentioned the name of Captain Cook, which is, of course, the first name which comes to mind in connection with Great Britain and the history of these islands. It is a matter of gratitude, I am sure, to all Englishmen, as well as to Australians, Canadians, and other representatives of British dominions, to think that next year is the one hundred and fiftieth anniversary of the discovery of these islands by Captain Cook

and that Governor Farrington has appointed a commission to celebrate this event. It is a generous act, I think, and it is a great pleasure to know that such service as Captain Cook rendered has been remembered.

"In our present days of activity, with Hawaii as the crossroads of the Pacific and on the pathway between Canada and Australia, Great Britain is brought into increasing contact with Hawaii and we hope to help in the solving of its problems."

N. Murakami, director of the Tokyo Academy of Music, chairman of the delegation from Japan, made the following response on behalf of his country:

"In the name of the Japanese Government I wish to express my sincere thanks for the kind welcome extended to us. I also wish to congratulate Secretary Work on his choice of the city of Honolulu, which is so conveniently situated for a meeting of Pacific countries, a place where all races of the Pacific live in peace and prosperity.

"All the subjects to be discussed at this meeting are of vital importance to us and we hope to take back with us new ideas that will enhance the welfare of our country. We desire to do our best to make the conference a success, so that it may be a benefit to all the nations of the Pacific.

"And, in behalf of my country and fellow delegates, I extend to your excellency and to the members of the conference a hearty aloha."

Salvador Novo, chief of the editorial department, Secretariat of Education of Mexico, on behalf of his Government, made the following response:

"The Mexican Government sends its most hearty greetings to the Territory of Hawaii. Mexico is greatly interested in this conference and its discussions.

"So vivid is the interest of our Government that our Secretary of Education, whom we have the honor to represent, has contributed material and information relative to our educational activities—the history of education in our country, our system of rural and open-air schools, our schools of painting—and further data which it will be my privilege to present to the delegates in book form.

"The Government of the United States has chosen the most beautiful place in the world to discuss the problems of human welfare, and let me add that if this is the first time the Mexican Government has sent delegates to Hawaii, it will not be the last time."

W. F. Kennedy, representing New Zealand, responded to his introduction with the following remarks:

"Mr. Chairman, Governor Farrington, delegates, and friends from the far-flung countries of the Pacific, it gives me the thrill of a great

experience to be with you to-day as representative of the Dominion of New Zealand, the most distant outpost of the British Empire. I have no hesitation in agreeing with the governor that this conference is the most important ever held here. The old Hebrew prophet foretold that in the latter days old men would dream dreams and young men see visions. To-day verily is this prophecy fulfilled, for is it not the realization of a dream and a vision that these men of many races and nations are gathered together on these isles of destiny as friends to promote the welfare and progress of the peoples of this vast area? I deem myself privileged indeed to take a small part in the great constructive purpose before us—the hastening of the day of 'the freer step, the fuller breath, the wide horizon's grander view'—the day when every man will be able to sit down under his own vine and fig tree, and the people shall dwell in peaceable habitations and sure dwellings, and none shall make them afraid.

"On behalf of my country I extend the right hand of fellowship with most cordial greetings and best wishes for the success of the conference."

E. Torres Belon, member of Congress and engineer in reclamation work, Peru, responded for his Government as follows:

"Having been requested by the Minister of Foreign Relations of my country to attend this conference as a delegate, my special instructions were to collect as much information as possible on the policies of reclamation of other countries as may here be presented.

"It is my great pleasure to be able to say to you that the Government of my country as represented by Mr. Augusto B. Leguia, the President of the Republic, is immensely interested in the objects of this conference. My country has for some time given great consideration to reclamation measures and is now undertaking the construction of irrigation systems in several regions for the purpose of redeeming immense areas heretofore laid waste by nature. When these systems are completed, her agricultural resources will be greatly enriched, and homes in greater numbers will rise in regions at present difficult to inhabit. Peru, as a friendly nation, extends to you and your countries the invitation to visit its land, where hospitality awaits all visitors."

After having introduced the delegates from foreign countries, Secretary Brown said:

"Certain outlying parts of the United States are represented at this conference, and I now take pleasure in introducing Kipeni Su'a, from American Samoa. Mr. Su'a is the principal of the best school in the islands, and was chosen by the superintendent of education as their delegate."

Mr. Su'a replied:

"I deem myself fortunate to be privileged to represent my people in this great conference of distinguished educators. The invitation to Samoa to send a representative is a token of President Coolidge's interest in and regard for Samoa, one of the distant spots from the United States and the only one south of the Equator over which Old Glory waves.

"This is the first time American Samoa has been represented in an educational conference of such wide interest. I am delighted to bring to you greetings from my people and assure you that we are in hearty accord with the ideals of this conference and that we will do all within our power to further its purposes, especially its educational aims and its efforts toward international friendship and cooperation.

"Samoa is probably known to most of you through the writings of Tusitala, whom you call Robert Louis Stevenson, but whom we call Tusitala, which in Samoan means 'story-writer.'

"The people of American Samoa live on five small islands, situated about 2,000 miles southwest of here—nearly halfway from here to Australia. The population of these islands is almost 9,000. The people are proud to be under the American flag and they are devoted to the aims and principles for which it stands.

"The Samoans are religious, happy, and generous. They have always admired and readily entered into friendship with the white people. After traveling in many parts of the world, Mr. Stevenson was captivated by the hospitality of both the land and the people of Samoa. In his book, Memories of Vailima, he states, 'I have chosen the land to be my land and the people to be my people to live and die with.' True to this decision he gave unstinted and unselfish service to Samoa. The Samoans loved him and stood by him in life and in death. The last words pronounced at his funeral were in Samoan, 'Tofa Tusitala! Tofa Tusitala! Tofa!' which being interpreted means, 'Good-by, story-writer! Good-by, story-writer! Good-by!'

"It is a keen regret to me that this conference is not held in Samoa so that all of my people might share the blessings I am enjoying here. I feel confident that the Samoans are anxious to learn what you are thinking and planning for the welfare of the peoples of the Pacific.

"On behalf of the Government of American Samoa I wish to thank his excellency Governor Farrington and the good people of Hawaii for their hospitality and the cordial welcome extended to me upon my arrival in your picturesque 'aloha' land to attend this conference."

The delegates from the various States, Territories, educational institutions, and other organizations represented at the conference were then introduced by Secretary Brown.

K. C. Leebrick, acting executive secretary of the conference, made the following announcements of committees:

Committee on credentials: (1) Raymond C. Brown, secretary of Hawaii; (2) A. L. Andrews, University of Hawaii; (3) K. C. Leebrick, acting executive secretary.

Committee on program: (1) John J. Tigert, United States Commissioner of Education; (2) Elwood Mead, United States Commissioner of Reclamation; (3) Stephen T. Mather, Director of National Park Service; (4) N. Murakami, chairman of Japanese delegation; (5) S. H. Smith, of the Australian delegation; (6) Islay McOwan, representing Fiji; (7) K. C. Leebrick, acting executive secretary.

Committee on resolutions: Hon. Wallace R. Farrington, Governor of Hawaii; and one delegate from each country represented at the conference.

After announcement of the committees, Secretary Work said:

"You all know what an efficient secretary Doctor Leebrick has been, and in order that the conference may not lose his services I hereby appoint him executive secretary of this conference." (Applause.)

Secretary Work then declared the conference open, adding that it would organize itself into three sections—education, reclamation, and recreation—each of which would meet at 2 p. m. in its respective meeting place.

The conference then adjourned to the dining room of the Royal Hawaiian Hotel, where the delegates were entertained at luncheon.

# *EDUCATION SECTION*

*General Chairman, John J. Tigert, United States Commissioner of Education*

*Secretary, Theo. Honour, United States Bureau of Education*

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## *PROGRAM*

*Monday, April 11, 1927—2 to 5 p. m.*

John J. Tigert, United States Commissioner of Education presiding.
Address by the chairman.
Addresses sketching briefly the educational systems of the following-listed countries:
Australia—S. H. Smith, undersecretary and director of education of New South Wales.
Japan—N. Murakami, chairman of the Japanese delegation.
Mexico—Salvador Novo, of the Secretariat of Education of Mexico.
New Zealand—W. F. Kennedy, delegate from New Zealand.
Peru—Antonio D. Castro, consul at Honolulu.
Hawaii—Will C. Crawford, superintendent of public instruction of Hawaii.
American Samoa—K. Su'a, of the department of education.

*Tuesday, April 12, 1927—9 a. m. to 12 m.*

N. Murakami, chairman of the Japanese delegation, director of the Tokyo Academy of Music, presiding.
Topic: "Exchange of educational ideas among nations."
"The exchange of educational ideas through the exchange of lecturers, teachers, students, research workers, and others actively engaged in education."—S. P. Capen, chancellor of the University of Buffalo.
"The exchange of educational ideas in Australia."—S. H. Smith, Director of Education, New South Wales.
General discussion: Doctor Richardson, Mr. Eiben, Doctor Tozzer, Doctor Harada, Doctor Murakami, Doctor Lee, Professor Pichardo, Mr. Su'a, Miss Thompson, Mr. Kennedy, and Mr. Kim.

*Tuesday, April 12, 1927—2 to 5 p. m.*

S. H. Smith, undersecretary and director of education of New South Wales, presiding.
Topics: "Establishment of centers of educational information," and "Evaluation of student credentials."
Opening statement by the chairman.
"Establishing centers of information."—T. Harada, of the Ministry of Education, Japan.
"The Institute of Pacific Relations as a center of information."—Arthur L. Dean, University of Hawaii.

General discussion: Mr. Abel, Mr. Kurokawa, and Doctor Capen.
"The evaluation of foreign student credentials."—James F. Abel, associate specialist in foreign education, United States Bureau of Education.
Discussion: Doctor Tigert, Mr. Smith.
Appointment of committees.

*Wednesday, April 13, 1927—9 a. m. to 12 m.*

J. C. Wright, Director of the Federal Board for Vocational Education, presiding
Topic: "Vocational education—its development and place in the public school program."
Address by the chairman: "Vocational education in the United States."
"Vocational education in Mexico."—Jose Arturo Pichardo, of the Secretariat of Education of Mexico.
"Vocational education in Japan."—Seiiti Hirota, director of the Kobe Technical College, Kobe, Japan.
"Vocational education in Samoa."—K. Su'a, department of education, Samoa.
"Vocational education in Hawaii."—James A. Coxen, director of vocational education, Hawaii.
"Education among adults."—Leon J. Richardson, director of university extension, University of California.
General discussion: Mr. Smith, Mr. Ligot, Mr. Lee, Mr. Kennedy, Mr. Dizon, and Mr. Bond.

*Wednesday, April 13, 1927—2 to 4.30 p. m.*

Salvador Novo, chief of the editorial department of the Secretariat of Education of Mexico, presiding.
Topic: "Vocational rehabilitation of the disabled citizens."
"Vocational rehabilitation of the physically disabled: Promotion by the United States Government."—J. C. Wright, Director of the Federal Board for Vocational Education, Washington, D. C.
"Rehabilitation and vocational guidance in Australia."—S. H. Smith, undersecretary and director of education, New South Wales.
"Medical rehabilitation in the United States."—Hugh Cumming, Surgeon General, United States Public Health Service.
General discussion: Mr. Bond, Doctor Murakami, M. Gourdon, Mr. Kennedy, Mr. Ligot, Mr. Jensen, Mr. Crawford, Mr. Novo, Mr. Wright, and Doctor Tigert.

*Thursday, April 14, 1927—9 a.m. to 12 m.*

C. N. Jensen, State superintendent of public instruction of Utah, presiding.
Topic: "Standards of child life: Care of the mother and the infant, and health instruction."
"Care of the mother and the child, and health instruction."—W. F. Kennedy, delegate from New Zealand.
"National standards in health instruction."—Mrs. A. H. Reeve, president of the National Congress of Parents and Teachers.
"Child welfare in Australia."—S. H. Smith, director of education of New South Wales.
"Health in the schools."—Lois Randolph, State superintendent of public instruction of New Mexico.
General discussion: M. Gourdon, Mr. Ligot, Miss Whang, Mr. Su'a, Doctor Appleton, Miss Withington, and Doctor Murakami.
Appointment of committee.

*Thursday, April 14, 1927—2 to 5 p. m.*

Henri Gourdon, inspector general of public instruction in France, presiding.
Topic: "Standards of child life: Free education and compulsory attendance."
Opening statement by the chairman.
"The standards of child life to be maintained."—W. F. Bond, superintendent of public instruction of Mississippi.
"Free education and compulsory attendance in Japan."—M. Murakami, chairman of the Japanese delegation.
"Education in Chosen."—S. Oda, Keijo Imperial University, Korea.
"Free education and compulsory attendance."—W. C. Crawford, superintendent of public instruction of Hawaii.
Music: Quartet, Hawaiian.
General discussion: Mr. Ligot, Mr. Dizon, Colonel Weeks, and Mr. Jensen.
Reception of committee reports.
Adjournment.

## *PROCEEDINGS*

### *Monday Afternoon, April 11, 1927*

*John J. Tigert, United States Commissioner of Education, Presiding*

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The education section of the First Pan Pacific Conference was called to order by Commissioner Tigert in the private dining room of the Royal Hawaiian Hotel at 2 o'clock.

### *ADDRESS*

*By John J. Tigert*
*United States Commissioner of Education*

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The history of civilization has been characterized by the progressive change from relative independence of communities and nations toward a mutual interdependence of all parts of the social and economic structure. Previous to the extensive introduction of machinery into the manufacturing system and the industrial revolution, even the most advanced nations, small communities, and families were often sufficient in themselves to satisfy their social requirements and provide for their own economic wants. Until the nineteenth century some of the outstanding states of the world remained practically without contacts with the rest of mankind.

With the establishment of modern manufacturing methods and the application of steam and electricity to transportation, vast changes have taken place. Division of labor has substituted the factory system for the self-sufficient home life, and the rapid elimination of both time and distance factors in distribution has replaced the self-contained national systems of commerce with a matrix of international trade relationships.

The consequences of these developments have been many and far-reaching in their influence. Mankind has been profoundly affected in all spheres of contact, both material and cultural. In a material way, the wealth of the world has been enormously expanded by the natural production of commodities in the communities best adapted for the respective outputs. The diversity of climate, topography, geology, and even of human factors, such as capacity for labor, essen-

tially differentiates the parts of the world and the nations in their abilities to satisfy various economic and social needs. As a result of the tendency toward what might be termed division of labor among the nations, accompanied by international trade, goods have been made far more abundant and much cheaper.

To-day, therefore, the poor readily possess commodities which formerly the very wealthy could have only at great cost or not at all. Kings and noblemen once traveled exclusively and luxuriously with their horses, but to-day the poorest travel at high speed in palatial cars in most parts of the world for a few cents a mile or the equivalent. The humblest may have in his home conveniences that the medieval castle did not possess. Modern mills in certain favored areas of the world turn out cotton and woolen cloth so cheaply and so abundantly that the peasant may be more comfortably clad than the prince in former ages.

On the cultural side, as is usual, changes have come about more slowly, but they are no less significant than the economic revolution. In the sphere of human relations, the adjustments are always more complex and more difficult to interpret than upon the material plane.

Since the World War, the desire to give more definite expression to our intellectual, spiritual, and cultural kinship has exhibited itself among enlightened communities and nations everywhere. The ultimate effect of this striving among the peoples of the world for a more definite cultural and social relationship can not now be easily forecast. At the moment, if we look to the Far East, to Europe, or to the Americas, indications seem to point to the fact that we need not expect an international policy or cultural scheme to be evolved at the sacrifice of national political units or cultural entities.

Neighbors may and should be mutually helpful without neglect of the home. States and nations can very properly cultivate reciprocal understandings and community of culture and commerce without violence to national traditions and aspirations.

I once had the opportunity of presenting to the late President Harding a group of 36 naturalized citizens of the United States, each of whom was born in a different country. In addressing them, the President said: "It might be interesting to you to know that, if I had not been otherwise informed, I would have supposed that you were a group of native Americans such as I meet from day to day." He then went on to express the hope that no one of the group had lost his love and devotion for the country from whence he had sprung. "For," said the President, "if you have, I fear you can not be very good citizens of the United States."

This incident impresses the truth that citizens of all nations and peoples of all races have much in common, so that we sometimes find

them capable of being reduced through a "melting pot" into a composite yet distinctive type. Such to-day are the mass of citizens of the United States.

But the important thing to remember is that those who make the best citizens in a melting process are those who retain in a large measure their native characteristics. Without this capacity they would make no contribution and would possess no stability in a citizenship composed of a blend of many races and cultures.

It is with a realization of these facts that we have ventured to ask our neighbors around the Pacific to gather here in the "crossroads" of the great ocean which formerly isolated us, but which now binds us together as a channel of communication.

The rapidly shrinking world makes us more and more mutually dependent and throws the problems of our relationship into constantly sharper relief. We have confidence that a frank and somewhat informal discussion of our educational problems by a few who are placed in positions of authority and leadership should be a distinct contribution to international good will and interracial cultivation. Those of us who represent the United States believe that we shall receive much helpful light upon our domestic problems, and we hope that representatives of other nations who have honored us by coming to have a part in these deliberations may gather something of value through the intercourse here provided.

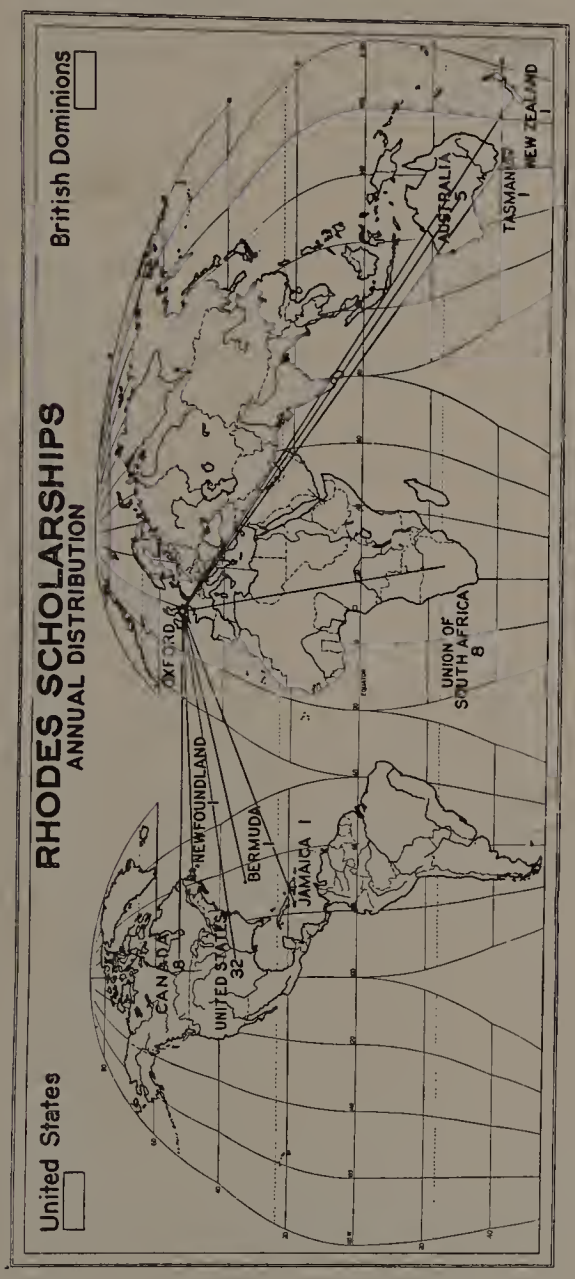
Let no one suppose that the ties of education are less important than the bonds of commerce, or that international culture is subordinate to foreign trade arrangements. One of the major themes for our discussions will be the interchange of students, fellows, and professors.

Cecil Rhodes, who amassed a huge fortune and was known as an "empire builder," was the first to see clearly the significance of such exchanges, and he rated them as the strongest international ties.

In March, 1902, the world was startled by what might fairly be described as the most original and remarkable bequest that had ever fallen from the hand of a generous testator in an attempt to bless his fellow men and benefit struggling posterity. The last will and testament of Cecil Rhodes was the master stroke of one of the most colossal minds of his age.

Few men have been so severely criticized as was Rhodes. He was maligned as a low moneygrubber and stigmatized as a man of inordinate ambitions. His only notice of this mud slinging was the simple remark: "All this does not worry me in the least. I have my will here [putting his hand on his breast as if he had the document in his pocket], and when they abuse me I think of it, and I know they will read it after I am gone and will do me justice when I am dead."

Verily, Rhodes's prophecy has come true, and to-day a world does homage to the great Englishman. His broad-minded and far-reaching policy is being continued and extended in some form or other by hundreds of agencies in different countries. The use which the United States has made of the Boxer indemnity fund is probably




*Provided for in will of John Cecil Rhodes*
*From a trust fund of £ 2,000,000*
*Annual stipend of each, - £ 350*
*Begun in 1903*
*1250 scholars chosen in 22 years*
*Scholars selected for :*
*1. Literary and scholastic attainment*
*2. Success in manly, outdoor sports*
*3. Qualities of manhood, truth and courage*
*4. Force of character and of instincts to lead*
*No applicant disqualified because of race or religion*

**OCCUPATIONS OF RHODES SCHOLARS**

| | U.S.A. | Dominions |
|---|---|---|
| *Teaching* | *243* | *107* |
| *Law* | *161* | *142* |
| *Business* | *61* | *25* |
| *Social and philanthropic* | *24* | *3* |
| *Medicine* | *23* | *64* |
| *Journalism* | *22* | *9* |
| *Ministry* | *19* | *11* |
| *Farming* | *12* | *11* |
| *Research* | *11* | *12* |
| *Diplomatic* | *8* | *-* |
| *Other occupations* | *24* | *82* |
| | *608* | *466* |

known to all of you. European universities, especially those of France, Italy, Germany, Spain, and England, welcome foreign students to their sessions.

Various organizations in the United States are offering scholarships and fellowships open to American students for study in foreign countries. These opportunities number well over 500 and involve an

annual expenditure of about half a million dollars. Many of these scholarships are entirely unrestricted as to subject or place of study, and allow great freedom in the selection of the worthy student and the best place for him to continue his training. Others are restricted as to subject, while some 200 or more are designed to promote cultural relations between the United States and some specific country or countries and are restricted as to place. At least 20 European and Asiatic nations are included in these exchanges.

Apart from these directed activities, each year sees a large and growing number of nonquota immigrant students coming on their own initiative to America to study. There were 1,462 students in 1924; 1,920 in 1925; and 1,331 in the first six months of 1926. Most of them returned to the countries from which they came, carrying back with them a knowledge and appreciation of our national life.

To what extent other countries are fostering among themselves intellectual and cultural appreciation and exchange I am not prepared to say. Plainly, it can not be expressed in mere statistics, but there is no doubt that it is growing in volume and importance and is productive of much good.

We have considered that vocational education should have a prominent place in our discussions in this conference. The reorganization of the educational program so as to adjust it to the modern world of machinery, commerce, and industry is a problem that faces all progressive nations to-day.

Industry constantly outruns educational practice, necessitating a continuous adaptation of materials and methods of instruction. The industrial revolution involved us in the most violent dislocation of our educational objectives that we have experienced in history. The objectives of general education took form in large measure when Hellenism was at its zenith. Aristotle dominated human thinking for more than a thousand years. Until the opening of the modern era in Europe all education was under the control of the church and was originally designed only for the training of the clergy and those who were to serve the church. Later it was adapted for the use of the nobility, gentry, and classes of independent means. Education for workers and for livelihood had no place in the scheme of culture.

The loss of temporal power by the church of Rome, the spread of political democracy, and the introduction of machinery precipitated the need of radical changes. Recent history in large areas of the earth has witnessed a gradual transformation of education from a church to a state instrument; from a prerogative of the privileged classes to an opportunity for the masses; from a mere adornment of the intellect to a means of earning a living. This transformation was inevitable but is not yet complete.

In the United States there developed a clear conviction that the success of the republican form of government depended upon education of the electorate. Hence, the system of publicly supported and State-controlled schools came into existence.

## SUMMARY OF EDUCATIONAL STATISTICS IN THE UNITED STATES, 1923-1924

| TYPE OF SCHOOLS | NUMBER OF SCHOOLS | NUMBER OF TEACHERS | NUMBER OF PUPILS | VALUE OF SCHOOL PROPERTY | TOTAL EXPENDITURES |
|---|---|---|---|---|---|
| KINDERGARTEN | | | | | |
| PUBLIC | 8.515 | 10.852 | 564.363 | With elementary | ① $ 17.187.095 |
| PRIVATE | 1.319 | 2.140 | 54.456 | No data | No data |
| ELEMENTARY | | | | | |
| PUBLIC | ② 255.450 | ③ 617.078 | ③ 20.898.930 | $ 3.744.780.714 | ③ 1.231.554.330 |
| PRIVATE | No data | ③ 51.536 | ③ 1.473.145 | ④ 300.000.000 | ④ 86.812.435 |
| SECONDARY | | | | | |
| PUBLIC | 22.561 | 144.230 | 3.434.525 | With elementary | 589.189.606 |
| PRIVATE | 2.828 | 15.704 | 306.562 | 396.616.100 | ④ 44.145.553 |
| COMMERCIAL | | | | | |
| PRIVATE | 2.200 | 4.105 | 188.236 | No data | No data |
| TEACHER TRAINING | | | | | |
| PUBLIC | 329 | 10.756 | 229.997 | ⑤ 123.117.978 | 40.697.256 |
| PRIVATE | 78 | 1.761 | 15.672 | ⑥ 26.368.702 | 4.157.947 |
| COLLEGE AND UNIVERSITY | | | | | |
| PUBLIC | 144 | 19.145 | 241.265 | ⑦ 360.382.724 | ⑨ 153.228.195 |
| PRIVATE | 769 | 37.134 | 423.001 | ⑧ 696.546.336 | ⑨ 235.014.392 |

① Salaries only. ② Buildings. ③ Includes kindergartens. ④ Estimated. ⑤ Includes $1.558.365 in endowments. ⑥ Includes $11.304.357 in endowments. ⑦ Plus $89.659.881 in endowments. ⑧ Plus $725.058.932 in endowments. ⑨ Includes additions to endowments, receipts.

Commercial and economic strength in the Nation must correlate largely with the training provided for the industrial and commercial classes of the population. Accordingly, although education in the United States is a State and local function, the Congress of the

United States 10 years ago established a Federal policy of subsidizing education for trades, industries, agriculture, and home economics.

Previous to this, during the great Civil War in the United States, the Federal Government had inaugurated a policy of granting lands from the Federal domain to colleges established for the teaching of agriculture and mechanic arts. This policy has been continued and reinforced by subsequent cash subsidies by the Federal Government to the agricultural and mechanical colleges.

Other governments participating in this conference have set up programs for the stimulation of vocational education. It is believed that a discussion of these plans and an exchange of experience in their operation should prove mutually helpful. The Director of the Federal Board for Vocational Education of the United States is here to participate in these discussions. In the development of a vocational education program we feel in the United States that we have lagged behind the most progressive nations, and at this point we have much to gather from their experience.

One of the characteristic effects of advancing civilization is the promotion of welfare among women and children.

Every device and precaution that safeguards the conditions under which children grow so that they may have all possible assistance in their physical and cultural development makes for a stronger citizenship. Accordingly, such matters as maternity and infant hygiene, industrial employment of children, morals, environment, mental hygiene, and related questions are coming to have a large place in our educational program. It is proper that standards of child life should be carefully considered in this conference.

No more fitting place could be found for a conference such as we are beginning than Honolulu, here in the common melting pot of so many peoples and in the central rendezvous of the Pacific Ocean.

Go back several thousand years and you find the world's only great civilizations along the rivers of China, India, and Africa. The Far East was the cradle of culture as well as of religion.

Time passes and history widens. We find the centers of civilization extending around the Mediterranean. Phoenicia and Carthage become the mothers of commerce, to be followed by the "glory that was Greece" and "the grandeur that was Rome." At the east end of this inland sea, the Hebrew gave expression to an ideal of monotheism in religion which was to spread over the occidental world.

Time passes and history widens. The flower of civilization blooms over western Europe and crosses the great Atlantic Ocean in the wake of Columbus and other dauntless explorers. Spain, Britain, France, and, to a less extent, other European states plant their culture in the Americas.

Time goes on and history widens again. We see the blend of eastern and western civilizations around the Pacific where now dwell two-thirds of the people of the earth.

It is in the center of this ocean and these populations that we gather where the stage is set for the "next grand march of civilization." No more hospitable or alluring place could be found for such a meeting. The welcome that has been accorded us has been wholehearted and complete. An unneighborly American once said "We have met the enemy and they are ours." We may well say "We have met the Hawaiians and we are theirs."

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## *EDUCATION IN AUSTRALIA*

*By S. H. Smith*

*Undersecretary and Director of Education of New South Wales*

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Australia is about the same size as the United States. It is divided into six separate States. Each of these States has its own educational system. There is a permanent officer presiding over the whole of the educational activities of his State. We have no Federal control of education, but we hope to make an organization similar to the Bureau of Education of the United States.

Unity of aim and procedure is maintained by frequent conferences between the six States, at which common problems are discussed.

Captain Cook discovered Australia in 1770, seven or eight years before he discovered this beautiful land of Hawaii. Eighteen years later the British sent colonists. There was no schoolmaster among the first arrivals. There was one clergyman to look after the spiritual needs of the people, but no one to take care of the mental needs. The first clergyman started a school and from that has grown a most extensive coordinated scheme of education. Gradually, schools increased in number, but these were for many years entirely church schools. In the year 1848, because of the wisdom of a farseeing statesman, a national system of education was inaugurated. From the year 1848 to 1880, this national system of education continued with subsidies to church schools, but in 1880 all such subsidies were withdrawn.

Since January, 1882, no public money has been paid to any school in New South Wales other than the public schools.

The difficulty with education in my country is largely a matter of finance. If we can get the money, we can do anything. We have large vision and farseeing hopes, and we shall attain the vision and fulfill the hopes when we have the money.

The educational system has two heads, a permanent head and a political head. The permanent head (which I happen to be just now) is charged with the responsibility of advising the political head and putting into effect the policy of that political head, who is designated Minister for Education.

There are two and a half million people in New South Wales, including 350,000 children of school age.

The present system of education provides first of all for a course of six or eight years of primary education. The greatest difficulty in a large State is to provide education for the children in the scattered districts of the far interior, but we have solved that problem with reasonable success. We have a primary school, which provides a course of instruction ending about the age of 12 years. Every child is compelled to attend school for that period. There are officers who look after the attendance of the pupils.

In September of each year I send letters to every parent who has a child just about to complete the primary course, drawing attention to the facilities the State provides for further education. We have several types of schools which provide post-primary courses: (1) The high school, with a five-year course; (2) prevocational schools. Of the latter there are four or five different types, viz: (*a*) The junior technical schools, which provide a three-year course for those entering the trades. (*b*) The commercial schools, which provide a three-year course for those who wish to enter the commercial world. (*c*) The domestic science schools, with a three-year course for girls, who, after leaving school, will pass into the work of the home or into commercial life; the third year of the domestic science course is devoted to commercial subjects, if desired. (*d*) The rural schools, which provide special courses for country children.

Besides the foregoing we have four other institutions for the higher education of the people. First, we have the University of Sydney, for students who have spent five years in a high school. Then, there is the Technical College, with 11,700 students, who have entered the various trades of our community; a teachers college, for students preparing for the important work of teaching; and an agricultural college, for those who intend to take up agriculture. The university is controlled by a senate consisting of 12 members. The education department has representation on the senate but the graduates elect the majority of senators. The university is the only educational institution mentioned by me to-day which is not wholly controlled by the department of education.

I can assure you that we are very earnest in our educational work. I appreciate the fact that whilst our general aims are identical I shall learn much from you of forms, devices, and methods. I hope that I may find much to introduce into the schools in my own land when I return to New South Wales.

# EDUCATION IN JAPAN

*By N. Murakami*

*Chairman of the Japanese Delegation, Director of the Tokyo Academy of Music*

When, in the latter half of the nineteenth century, Japan opened its doors, which had for more than 200 years been closed to foreigners, and a new régime was established, the Government at once set itself to reorganize the system of education which had prevailed up to that time. The educational systems of Europe and America were studied with a view to establishing a modern educational system in Japan. Our present system of education is the result of this study, with the addition of certain changes which have been made from time to time during the last 50 years.

As you will see from the pamphlets which you have in your hands, we are giving the children an elementary education over a period of six years, and the number of children reached has been gradually increasing until in 1923 the attendance reached 99 per cent of the children of school age. Our secondary schools cover a period of five years for boys and four or five years for girls, with vocational schools offering courses of from two to five years. There are institutions of higher education—colleges, schools of agriculture, commerce, industry, navigation, dentistry, medicine and pharmacy. We also have universities offering some or all of the faculties of law, engineering, literature, science, agriculture, and economics, the courses of study ranging from two to five years. Then, too, we have schools for fine arts and music.

We have normal schools for the training of teachers of both sexes for positions in the elementary schools, and special institutions and higher normal schools for training teachers in the secondary schools. Our universities and colleges supply a good number of teachers. A noteworthy feature in our educational progress is the rapid increase in the numbers of girls receiving higher education in the higher normal schools and private universities. Many of these students take up dentistry and medicine. Some of the principal universities admit qualified girls as regular or special students. There is an ever increasing demand for an open door for girls in all universities and for the establishment of special institutions for the higher education of girls.

In the course of the development of our educational system we have had many problems to solve. In the beginning, we had no schoolbooks or teachers trained in the modern methods of teaching. So American and English teachers were engaged, and they used American and English schoolbooks, teaching English, mathematics, history, geography, and similar subjects. For the English language,

we had such books as Webster's Spelling Book, Sander's Union Readers, and various English grammars. We used Davies' textbooks in arithmetic, algebra, and geometry, Guyot's Geography, and Parley's History. Even Japanese teachers trained abroad used English in the teaching of many subjects. It took many years for us to compile our own textbooks and to train our own teachers.

The next problem for us to solve was the use of Chinese characters in our writing. Our scholars used to write their books in Chinese, and even in the more popular books Chinese characters were largely used along with the simpler Japanese syllabics. Consequently there arose a difference of opinion regarding the use of the various types of characters. Some scholars insisted on keeping the Chinese characters, while others favored using syllabic signs only, and many advocated the use of the English alphabet in spelling our words. After a long controversy, a practical solution, limiting the number of Chinese characters for ordinary use, was reached.

Then came the question of whether or not a foreign language was to be required in the secondary schools. A review of the rapid growth of international relations made clear that it was necessary for educated citizens to have a knowledge of at least one foreign language. And now, although it is imposing a difficult task on the students, we are teaching English in most of our schools, and German or French in a few.

Our efforts to promote education in Japan during all these years have borne fruit and there is now a widespread demand for higher education among our young men. As a result, we find that in the larger cities only one out of every five to ten candidates is admitted to the secondary schools. The same difficulty is experienced by those wishing to take the preparatory courses for the universities and similar institutions. The only solution of this problem is an increase in the number of schools, and that involves large expenditures.

These are only some of the difficulties with which we have had to contend, and we have been fortunate enough to have solved a few of them, but many of the problems still remain. That is why we are eager to learn what is being done in other countries, so that we may improve our own educational system.

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## *EDUCATION IN MEXICO*

*By Salvador Novo*

*Chief Editorial Department of the Secretariat of Education of Mexico*

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When the Spaniards took possession of Mexico they made no attempt to provide for the education of the natives. The Spanish founded the first university in the New World, but with them educa-

tion was only a privilege for the nobility and they did not adapt it to the new conditions and new environment.

The Spanish missionaries, in the main, went to teach the natives religion. It happened that not only the first book ever printed in America, namely, the Escala Espiritual de San Juan Climaco, but all the other books of the early period were intended to convert the Indians to the Christian faith. The old Aztec temple was demolished and the superb cathedral built upon its wreck. But so long as the natives were considered to be inferior human beings, not worthy of any attention, they remained unredeemed despite the labors of Bartolomé de las Casas and other wise and saintly missionaries, who realized, while carefully studying the stone history of the vanquished race, that the native culture was different, but by no means inferior and in many ways superior to the European. Many of the natives emigrated to the mountains, taking a refuge in the arts and crafts of their ancestors, and creating beauty, as the only means available for expressing their intelligence.

After the independence of Mexico was secured in 1821, one of the very first undertakings of the Republican Government was to establish a Federal system of education supported by the Government, but it could not be done immediately because of lack of funds.

At first a system of mutual teaching was used and small subsidies given to the States by the Government to establish schools of reading and writing. Later every State had its own educational system and special laws for education, and was as free as in the management of its other internal affairs.

Up to recent years the education of the natives continued to be disregarded by the Government. The reform war changed this condition, and for the first time due attention was given to the Indian. Two of our more distinguished statesmen sprang from this situation, Juarez and Ignacio Ramirez. Professional schools were established in the City of Mexico. It was during the period when Auguste Comte's philosophy was in the limelight all over the world, and positivism was strongly propagated in Mexico by Gabino Barreda, the founder of our national preparatory school, a prototype of the national university, which was established during the régime of Porfirio Diaz. Professionalism in its narrowest meaning became the general ambition. Then every man in Mexico desired to become either a physician, a lawyer, or an engineer. Those were the only professions the students wanted to enter. Still the educational needs of the native Indians were disregarded.

During Diaz's long "reign," as we might call it, the Ministry of Public Instruction was founded, and at its head there was a man whom we respect as one of our greatest educators, Justo Sierra. But the conception of education was still instruction, as you may remark, of a purely theoretical type.

The revolution of 1910 inaugurated a new era in education. Everybody was included in the educational program. This is the modern conception of education. We have many races and many castes or social classes. We find the natives of the mountains our greatest problem, not the natives of the cities, who are more frequently in contact with the civilization of city life. The first aim of the Government after the revolution was to establish rural schools for the natives of the mountains.

Public education in Mexico has been extended so as to include instruction of an agricultural and industrial type, which was lacking in the past. Measures have been taken for integrating the scattered country by incorporating the many millions of Indians into the national life. This later achievement was entirely the work of President Obregon, who started it, and is being carried forward by President Calles, whose comprehensive educational program is being conducted by Dr. J. M. Puig Casauranc, our Secretary of Education.

Our rural school system has been spreading. These rural schools are devoted to agriculture and every possible subject is taught in them. We have one teacher for each school. Teachers live in the schools where they teach.

At first we taught the students to read and write, but as they had no books to read and not even friends to send letters to, this training did not help them much. We now teach them to read and write and also to take care of the products of the land. We try to develop in the natives higher needs and then to help them satisfy these needs as much as possible.

We have 3,000 rural schools in the country supported by the Federal Government, and they are increasing at the rate of 1,000 a year. We are very much in need of teachers to train for the industries, but it does not seem possible for us to secure them yet.

The rural teachers who live among the natives are supplemented by a cultural mission of six members, consisting of a nurse, a teacher of physical culture, a teacher of the smaller industries, etc. These missions go to the different villages and hold institutes of six weeks' duration for rural teachers and other natives who wish to attend.

There is a normal rural school in every State for the training of the rural teachers. After a two-year period of training the students go back to the mountains to teach other natives.

Rural education forms part of the program of the Government. The rural schools belong to a division in the education department and are under the Minister of Education.

Besides the rural schools, we have the primary schools and the normal schools. The primary schools include the elementary schools, with a four-year course, and the grammar schools, with a two-year course.

I may add that the primary schools supported by the Federal Government in the States are not very numerous; but we have, nevertheless, at least one school in every State which we call "tipo"—a type or model school. These schools teach the new ideas and methods in education, such as self-activity, the project method, etc. This standard or typical school is put before the eyes of the governor of each State to stimulate him to establish these ideas for the betterment of future education in the schools not under Federal control.

After he finishes the primary school the child may go to the secondary school for three years, then to the preparatory school for four years, and finally to the university for law, medicine, or engineering. Before he goes to the university he can go to a technical school for training in commerce or mechanics, or to a normal school for a five-year course.

The university is under the Government and offers courses in law, medicine, dentistry, commerce, architecture, and the fine arts. The university also maintains a graduate school. For the past seven years the university has conducted a summer school for foreigners who wish courses in the Spanish language, Spanish and Mexican literature, folk ways, archæology of the old civilization of Mexico, etc. Four hundred Americans annually attend this summer session, but, because of the distance they have to travel, only a few other foreigners take advantage of these courses.

The university, which is visited by many prominent men, has an extension division and an exchange program. Dr. Paul Monroe and Dr. John Dewey were with us lately.

The Minister of Education carries on his work through the following departments: Rural schools department, primary and normal schools department, technical and commercial schools department, secondary schools department, and the national university. We also have, established by the present secretary, the department of pyschopedagogy and hygiene; the department of fine arts, which includes drawing, manual training, physical culture, music, and moving-picture production; and the department of archæology, which has charge of the ancient Aztec and colonial monuments, and studies the racial characteristics of the natives for practical educational purposes. Finally, there is the editorial department, which prints all necessary material for the schools and for educational propaganda. From this latter department come the books and pamphlets which I take pleasure in presenting to you, and which I hope will give you an ample idea both of our educational past and of our present ways of facing it.

## *EDUCATION IN NEW ZEALAND*

*By W. F. Kennedy*
*Delegate from New Zealand*

The ideal laid down by the New Zealand educationists in the early days was for free secular and compulsory education, and this ideal has been maintained up to to-day.

The General Government provides nearly the whole of the funds, the national expenditure as far back as 1921 being £2,500,000 per annum. Large endowments in various parts of the Dominion supplement State aid, more particularly in connection with secondary and university education.

A large number of national scholarships are granted every year by competition to children of the primary schools. These cover the fees for secondary and technical schools, but the holding of a certificate of proficiency in the public schools entitles the pupil to free education in the secondary and technical, domestic science, and agricultural schools, and further scholarships pave the way, free of expense, through the university for those who prove worthy of the privilege.

There are four university colleges in New Zealand, one in each center—Dunedin, Christchurch, Wellington, and Auckland, the one in Dunedin being the senior institution. It is a great Scotch seat of learning, endowed by successful colonists from the land of Burns—the land of plain living and high thinking.

It is said the average attendance of children in the primary schools of New Zealand is much higher than in any of the Australian States, the number of children who are unable to read and write between the ages of 10 and 15 being only 0.43 per cent. Nearly three-fourths of the Roman Catholic children do not take advantage of the State system, their parents sending them to the church schools, although these are entirely without help from the State—a grievance in this section of the community. There are a number of private schools which the well-to-do support.

For many years the natives (Maoris) were allowed to neglect their children, but a great change for the better has taken place in recent years and now about 10,000 Maori children regularly attend school. The parents of truants are prosecuted and other effective means used to secure regular attendance.

As regards child welfare, a very marked feature of New Zealand's educational system is the attention paid to this subject; medical and dental inspection takes place regularly and a school of dental service is in operation for children who have not been treated by private dentists. A special branch of the education department is called the "child-welfare department." All educational matters are under a

Minister of Education, one of the portfolios in the Cabinet, but the inspector general of schools is the executive head.

A combination of local and central authorities prevails in educational administration, but teachers rank as civil servants and are paid out of State funds. Salaries are rather low, ranging from £120 ($600) to £400 ($2,000) for State-school teachers.

## *EDUCATION IN PERU*

*By Antonio D. Castro*

*Peruvian Consul at Honolulu, Hawaii*

The most ancient university in the New World, that of San Marcos at Lima, was founded in 1551; the university at Cuzco in 1598; and college at Arequipa in 1616. There is also a university at Trujillo, a school of mines and engineering at Lima, a school of arts and trades, a military school, a naval school, and a school of agriculture. Like the neighboring Republic of Ecuador, Peru has been honored by the achievements of her historians and geographers, the Paz Soldans and others; writers on constitutional and legal subjects; poets and dramatists; and such naturalists as Rivero and Pierola. Elementary education is compulsory for both sexes. Instruction is free in the public schools. In the Government high schools, one of which is maintained at each of the capital cities of the Departments, a small fee is required. The number of primary schools in 1926 was 7,000, with 9,000 teachers and 200,000 pupils. There are 10,000 students in the high schools and 3,000 at the universities. The Roman Catholic bishopric of Cuzco was founded in 1537, and the See of Lima in 1541. The provisions of the constitution and laws in regard to worship recognize only Roman Catholicism as the religion of the state, although other religions are tolerated as a social custom. All churches and convents belong to the state, and the Government appropriates annually about $80,000 for the maintenance of public worship.

## *EDUCATION IN HAWAII*

*By Will C. Crawford*

*Superintendent of Public Instruction, Territory of Hawaii*

Education in the Hawaiian Islands begins with adults rather than with children. Between the years 1823 and 1827 a peculiar system of schools sprang up, which spread rapidly over the islands to the remotest villages and flourished for about 10 years. The high chiefs,

with their immediate attendants, were the first pupils. Each chief sent the most proficient scholars in his retinue to his different lands as teachers, with a notice to his tenants to attend school. The eagerness of the people to acquire the novel and wonderful arts of reading and writing was intense, and almost the whole population of both sexes and all ages went to school. These primitive schools, at the time of their highest prosperity, reached the number of 900, attended by 52,000 pupils, mostly adults.

It was a remarkable instance of a body of despotic chiefs exerting themselves for the education of their subjects, just emerging from barbarism. The time of school was from one to two hours in the latter part of the day, and the pupils were called together by the blowing of a conch shell. The methods of teaching were of the rudest kind and little was taught beyond reading, writing, elementary arithmetic, and geography. The headman of each village was ordered by his chief to provide the teacher with a house, food, and clothing.

In 1831 American missionaries established the first real school based on American methods. This school was followed by several others during the next few years. With the beginning of schools for children the attendance of the adults rapidly dropped off, and thereafter attention was focused on education for the children.

In 1841 the first school laws were enacted, and school agents were appointed by the king to serve on each of the principal islands. Attendance was made compulsory for all children between the ages of 4 and 14. In 1846 a department of public instruction was organized and placed under the charge of a minister of education. In 1855 this department was remodeled and placed under a board of education, whose president was the minister of public instruction.

This board of education organized and supervised three types of schools: (*a*) Government common schools, taught in the Hawaiian language; (*b*) government English schools, taught in the English language; (*c*) independent or select schools, taught in the English language, and maintained by outside agencies but assisted by government funds.

All government schools provided free education, and compulsory attendance was revised to include all children from 6 to 14, inclusive. A regular course of study was adopted, extending over the 12-year period of elementary and high schools.

When Hawaii was annexed to the United States as an independent Territory in 1900, the system of education was carried on under the same organization, except that the minister of education became the superintendent of public instruction. The board of education became the board of commissioners for public instruction.

As stated before, the system of education is modeled after the best schools of mainland United States and differs only in the fact that it has a centralized system for the whole Territory. This fact is one of

the excellencies of our education, because it means standardization and efficiency, especially in regard to the rural schools.

Hawaii has about 200 schools, with a staff of 2,155 teachers and 62,500 pupils. The average enrollment increase is at the rate of 7 per cent per year. The department has under its control all public schools except the university—similar in this respect to the organization of New South Wales. The system consists of elementary schools, junior high schools, senior high schools, a normal school for training teachers, and a school for the training of deaf and blind children. We are now passing through a period of changing from the usual 8–4 plan to the 6–3–3. Some of our schools still are conducted along the 8–4 plan, 8 years in grade school and 4 in high school; and some are now regularly following the 6–3–3 plan, 6 years in grade school, 3 in junior high school,and 3 in senior high school.

The department of public instruction controls all educational policies, has control of appointment of all teachers, arrangement of the course of study, use and selection of textbooks, and all other matters pertaining to public education. The department also makes up the budget biennially, which is presented to the legislature, for the provision of funds for the entire department. These funds are appropriated by the legislature, together with funds for the maintenance of all other Territorial departments and the whole amount is raised by the levying of a single tax. In other words, Hawaii has no specific municipal or district taxes for the support of schools. School money is provided for in three main funds:

1. The fund for teachers' salaries is based on the enrollment in the schools. One teacher is allowed for every 35 pupils in the elementary schools and 1 teacher for every 20 pupils in high school, with additional supervisors, vocational teachers, etc.

2. The general school fund cares for school supplies of all kinds, books, classroom supplies and equipment of classrooms.

3. The special fund provides for the erection of school buildings and their maintenance, and equipment such as desks and tables. This fund is administered through the several counties in the Territory, four in number.

Teachers' salaries are based on certification and experience. In rural districts cottages are furnished the teachers, as there are no other suitable places for them to live.

Teachers are supplied largely through local sources—graduates from the education department of the university and normal school, with some augmentation of teachers from the mainland. The average length of teacher tenure at the present time is five years. This is rather low, due to the fact that a number of teachers come out for a year or two and then go back to the mainland. More and more the local number is increasing and the percentage from the mainland decreasing, which in turn lengthens the tenure period.

Requirements for teachers' certificates at the present time are as follows: Elementary schools—graduation from a standard two-year normal course; junior and senior high schools—graduation from a standard college or university, with a minimum of 18 credits in special educational subjects.

The advantages of our centralized system are twofold. In the first place, it standardizes all schools as to school buildings, classroom equipment, courses of study, teachers' certification, teachers' salaries, etc., so that all children get an equal opportunity regardless of whether they live in the cities or rural districts. In the second place, the burden of school support is spread equally over the whole Territory, so that the small country districts are not taxed too heavily for their schools. These two factors increase the efficiency of public education tremendously.

## *EDUCATION IN AMERICAN SAMOA*

*By K. Su'a*

*Of the Department of Education, American Samoa*

It is a pleasure to me to discuss educational work in Samoa.

The Governor of American Samoa is appointed jointly by the President of the United States and the Navy Department, by the President as governor and by the Navy Department as commandant of the naval station. He must, therefore, be a naval officer. The governor is assisted by three Samoan district governors, one for each political division, and they are assisted by the county chiefs, who are also assisted by the village chiefs.

The Navy government was established in American Samoa in 1900 as a result of the treaty between Germany, Great Britain, and the United States and the cession of the islands by the Samoan chiefs. The secretary of native affairs is a civilian, who also serves as judge of the high court. All the departments of the government except the judicial are headed by naval officers, whose services are free to the Samoan government.

The governors have all been interested in education, especially Crose, Poyer, Evans, and the present governor. It was during the administration of Governor Poyer that the school that bears his name was built. This is the central school of the public-school system, and would be the natural site for a college or university of American Samoa. During the time Governor Bryan has been in Samoa the schools have made marked progress, larger appropriations have been made for education, and four new buildings have been erected as the result of his activity.

Governor Evans's plan in 1921 was to provide at least a fourth-grade education or its equivalent for all normal children, making provision for those who wish to pursue further study by establishing schools to teach up to and including the eighth grade. A superintendent and board of education were appointed and a director of education employed.

Nineteen schools have proven to be the required number. Teachers were selected from among the Samoans, most of whom were sadly lacking in educational qualifications and experience. There are now 47 teachers, including a director of education. Constant efforts are exerted by the department of education to increase the efficiency of the Samoan teachers by inspections, teachers' meetings, and normal training.

There are 1,800 children enrolled in the public schools. The majority are in the chart, primer, and the first grade. To understand this situation, it is necessary to remember that the present school system was not established until 1921. In four schools manual training and sewing classes are conducted. Most of the schools have plantations where agricultural experiments are being encouraged.

The department of education is handicapped chiefly by lack of sufficient funds to provide for more suitable buildings and more experienced teachers. However, this is not chargeable to the Samoan government. It is doing its full share for education. Out of the total appropriations for 1927 of $104,000, the sum of $22,688 was allotted for educational purposes.

As far as we know, the first white man to visit Samoa was a Frenchman who reached our shores in 1722. In 1828, the Wesleyan missionaries came to Samoa, followed in 1830 by the representatives of the London Missionary Society, who put our language into script and translated the Bible into Samoan. The Catholics and the Mormons came later.

The missionaries of these denominations have been and are still great factors in educational work in Samoa. There are now six parochial schools with an enrollment of approximately 400. In addition, the native pastors of all these churches conduct schools in connection with their parishes for the younger children. These schools are conducted in the morning and in the afternoon, before and after the regular work of the public schools.

The Code of Laws of American Samoa requires attendance at school from the age of 6 years to completion of the work of the fourth grade. Instruction in the public schools of American Samoa is given in 10 classes of normally 1 year's duration, each as follows: (*a*) Chart class, (*b*) primer class, (*c*) first grade, (*d*) second grade, (*e*) third grade, (*f*) ourth grade, (*g*) fifth grade, (*h*) sixth grade, (*i*) seventh grade, (*j*) eighth grade.

In addition, a normal-school course is given each year for teachers and prospective teachers. Instruction n chart and primer classes and first grade is in accordance with mimeograph regulations prepared from time to time by the department of education.

Due to the fact that the present public-school system was not established until 1921, we only teach up to and including the eighth grade. The enrollment of our 19 public schools for 1927 could not be procurable in the office of the department of education before I left Samoa. Our enrollment, however, by grades for 1926 was as follows: Chart class, 785; primer class, 264; first grade, 209; second grade, 198; third grade, 172; fourth grade, 92; fifth grade, 47; sixth grade, 20; seventh grade, 15; eighth grade, 4; total enrollment, 1,806.

Of the 13 educational problems presented for consideration in the Pan Pacific Bulletin, only 6 can be applied to education in Samoa. Careful consideration is given to the life and environment of the child; lessons are given according to its ability.

*Vocational guidance.*—Food is easily produced and is usually plentiful in Samoa. But there is vast room for vocatio al education and improvement on our plantations. The people of Samoa must know how to raise their food trees and plants profitably in order to save much wasted energy. Coconut is our only export, and immediate steps must be taken to interest the people in keeping up the industry. For lack of experience it is impossible for the Samoan teachers to improve our present condition, although they are very willing to do their best. Rubber, coffee, cocoa, and vanilla can also do well in Samoa. Without agriculture it is impossible to supply the needs of our coming generations. There are only 22 stores in American Samoa where there is a possible chance of securing a job as a clerk, and only a few Government positions exist; but all these places are taken. As there are very few opportunities for the young men and women of Samoa, they are seeking employment and obtaining education in other countries.

*Administration and supervision.*—The Samoan child is usually studious and obedient, and if the teacher cares to study his characteristics, discipline in the school presents no problem. The present school system is being proven to be the best one ever adopted. The Samoan teacher if properly trained is the advisable one for Samoa, considering that the Samoan child speaks only Samoan at home and translation is always necessary. More effort should be exerted to increase the efficiency of the Samoan teachers. The only possible chance for them now to secure an education is during their normal training, conducted only once a year for a period of two and a half months.

*Cost of education.*—Only the taxpayers pay for the education of the Samoan teachers and children, with a special allotment from our cus-

toms revenue. Among the taxpayers are some school boys who have reached the height of 5 feet 1 inch. Our 2,260 taxpayers in 1926 paid $6 poll tax and $3 for education. Due to the lack of early birth records and the lack of sufficient funds for educational purposes every male Samoan who has reached the height mentioned above is taxed. The sum of $1.25 is estimated to be the annual cost of education per child. In the public schools the children pay for their books and all school supplies.

*Curriculum revisions.*—The superintendent and the director of education, subject to the approval of the governor and the board of education, select the textbooks and revise from time to time the syllabus of course of study.

*Character and moral education* are emphasized in all the schools. The public schools work in cooperation with the mission schools, and the combination is showing good results along this line. Many children are ambitious to become clergymen and are attending missionary training schools.

The governors have all been interested in education and have endeavored to conciliate and cultivate friendly relations with the people of Samoa. Many governors have made annual appeals to the Navy Department for congressional help; and Governor Crose, on December 24, 1910, urged the establishment of an agricultural experiment station. The repeated requests for money to found public schools have not been granted. The Samoan government is doing its full share for education.

Our immediate need is increased funds in order to provide for more suitable buildings and more experienced teachers. Our copra industry must also be protected by showing the people, through education, how to cultivate the land so that the plantations will yield more. To understand this situation I herewith give the number of pounds of copra sold during five different years:

| Year | Pounds |
|---|---|
| 1911 | 3, 374, 167 |
| 1912 | 3, 477, 508 |
| 1918 | 3, 067, 177 |
| 1924 | 3, 920, 640 |
| 1925 | 2, 945, 308 |

It can be said that 1926 and 1927 will show lower figures than 1925, for many coconut trees were damaged and blown down by the storm in 1926.

Congress appropriated $11,000 in 1926 for the reconstruction of schoolhouses which were ruined by the hurricane of January. The Navy Department has given us some of its men to teach in our public schools, free of charge.

Adjournment.

53180—27——6

## *Tuesday Morning, April 12, 1927*

*Topic: "Exchange of Educational Ideas Among Nations"*

*N. Murakami, of Japan, Presiding*

The session was called to order by the chairman at 9 o'clock in the ballroom of the Royal Hawaiian Hotel.

### *THE EXCHANGE OF EDUCATIONAL IDEAS THROUGH THE EXCHANGE OF LECTURERS, TEACHERS, STUDENTS, RESEARCH WORKERS, AND OTHERS ACTIVELY ENGAGED IN EDUCATION*

*By S. P. Capen*
*Chancellor of the University of Buffalo, Buffalo, N. Y.*

The subject I am to discuss is appropriate to such a conference. It is especially appropriate here at this focal point of several widely diverse cultures. Like many of you, I am still under the spell of the moving and beautiful pageant through which, last Thursday, the school children of Hawaii presented to us in living symbols the history and the spirit of this Territory. Whoever witnessed that spectacle must have a vivid sense of the colossal and many-sided experiment that is here in progress; an experiment not only in the amalgamation of races but also in the reconciliation of different social and intellectual standards in the mutual adjustment of different philosophies of life. The educational system which is the active agent in this fusion is predominantly American in form. But I dare say the system has already been subtly affected by the ideas prevailing in the countries to which large groups of the citizens of the Territory owe their origin.

And what future possibilities are suggested! The elements are here at hand for fashioning a scheme of education that will incorporate the finest contributions of all the great civilizations that border on the Pacific. Indeed, some such development appears to be inevitable, if Hawaii is but given a free hand by the agencies that mold the educational policies of the rest of the United States. Spontaneously something of that sort will take place in response to the irresistible demands of this community, with its wealth and variety of cultural

material. The imagination of every student of education is fired by the thought of what may happen here within the next generation.

That, however, is not my theme. In discussing the topic assigned me, I must perforce deal chiefly with conditions much less favorable to the exchange of educational ideas than those by which we are at the moment surrounded. May I begin with a few axioms.

No country has a monopoly of excellence in education. Every civilized land may learn something from the aims and practices of others. Every civilized land has something to give. Probably no means is more efficacious in acquainting one country with the educational purposes and methods of others than the exchange of teachers and students. These propositions, I assume, hardly need argument or elaboration.

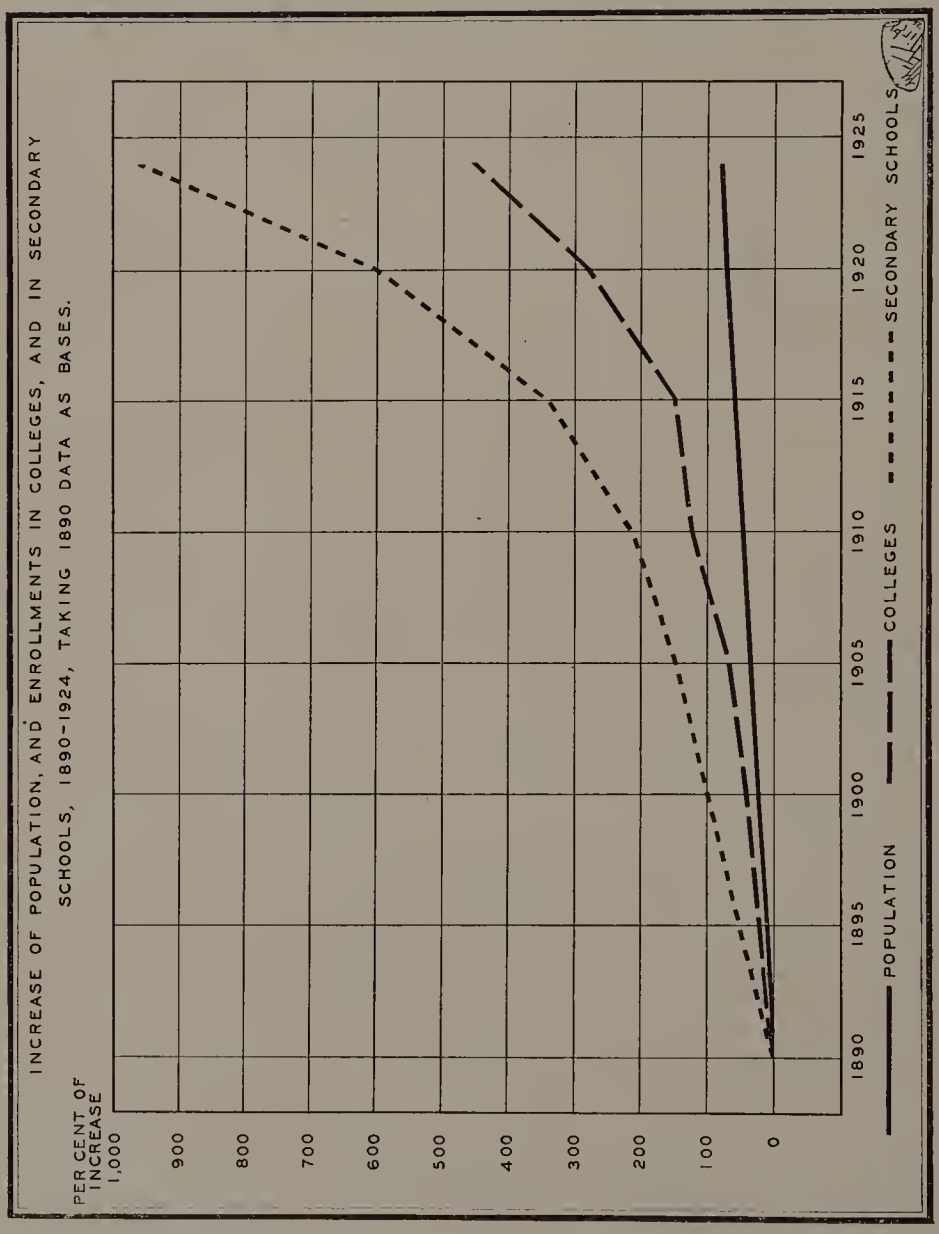
They do need certain qualifications, however. Broadly speaking, a national system of education is a local product. It expresses the national genius. It is the outgrowth of national needs and traditions. It is designed to equip the youth of the country for competent living in a special environment, namely, the national environment. By environment I do not mean merely or even primarily the physical environment. I mean the whole complex of social customs, intellectual standards and interests, and spiritual aspirations that make up the national life. The most characteristic features of any national scheme of education are precisely those which relate it to this environment, which are dictated by the environment's imperious demands.

Therefore, a system of education, or even a single institution, unless perhaps it be a technical school, can not be successfully transplanted. The world has witnessed a number of attempts at such transplanting but nearly all of them have been disappointing. Only the indigenous growth seems to have genuine vitality. On this growth may be grafted shoots from other stocks and increased fruitfulness may result. This is the process that we should have in view when we consider the benefits to be derived from educational exchanges.

But the exchange of teachers and students may be of no benefit whatever unless the individuals are of the right sort, unless they are superior representatives of their respective countries, and unless the conditions of their foreign sojourn are favorable. Certain overenthusiastic internationalists have not always recognized these facts, and several faulty schemes of exchange have been organized, especially of late, that have been almost barren of useful results.

These are general observations. Their validity is attested by the experience of a number of countries. It is my task, however, to deal specifically with the American experience. In some of its aspects the American experience is perhaps more illuminating than that of any other nation.

What I am now about to say would probably be considered heresy by most American laymen, and even by the majority of American educators. Nevertheless, I am persuaded it should be said. Our national system of education has suffered seriously from the indiscriminate transplanting of foreign institutions. For example, we took our eight-year elementary school from Germany. We took the




four-year college from England. We modeled our graduate school, and in some measure our higher professional schools, after the German university; but each of these institutional units was forced by us into a totally different setting from that in which it originally grew up.

The German Volksschule was a class institution designed to furnish all the formal education accorded to children of the lower classes.

The United States, in theory at least, has no lower classes. Our elementary school, constructed on the German model, is the first of a series of institutions, all of them accessible to everybody. The whole population is expected to pass through the elementary school. The majority of the population is now expected subsequently to attend the secondary school which is the next institution in the series. A considerable percentage of the population is expected to pass from the secondary school into higher institutions.

The English college, transplanted early in the life of the American Colonies, was, at the time of its introduction and for two centuries and a half thereafter, the institution offering the highest form of organized education. That was its status in England where it represented a teaching and residential unit of the university. This status it has retained in England, but not here. American educational leaders some 50 years ago brought us the German university which differed essentially from the English university and 50 years ago surpassed the latter in the range and quality of its scientific efforts. This German institution was then superimposed upon our college and became the graduate school. Once the graduate school was established, steady pressure began to be exerted to raise professional education to the post-graduate level. With respect to the older professions of law, medicine, and theology this effort has already been partly successful.

A considerable treatise could be devoted to the effects of these borrowings. Naturally they can not be discussed in a brief paper. I would not be understood to imply that all the results have been bad. On the contrary, many of them have been admirable. But the principal defects in the organization of American education, defects which foreign observers invariably note and Americans regretfully admit, can be traced to the too ready adoption of institutions that were the product of a different environment and the incorporation of them into our system without essential modification. Among these defects may be mentioned in passing: The unsatisfactory character of the elementary-school curriculum which is now undergoing reconstruction throughout the United States, the cramped position of secondary education, and the late entry of the American youth into professional and vocational careers.

But if the wholesale borrowing of institutional units from other systems has proved to be in some respects unfortunate for America, wholly beneficent results have attended the importation of what Commissioner Tigert has aptly called educational ideas. Just what are educational ideas? If I understand him aright, such phenomena as methods of teaching, schemes of training for special occupations, scientific techniques, and concepts that are broadly philosophic may

be so classified. Ideas of this sort America has taken freely from other countries. For example, the theories and practices of Froebel and Montesorri, methods of teaching foreign languages, the conception of the rôle of the fine arts, the processes of investigation and training in the medical sciences, and many more; and American education has been immeasurably enriched and vitalized thereby. In return, America has contributed useful ideas to other countries. For instance, the emphasis on social training as a part of higher education which has recently impressed the French; certain practical methods in training agriculturists, librarians, and teachers; the new scientific processes for the study of education; and most important and influential of all, the concept of a democratic education.

In short, American experience during the last 75 years seems to offer a plain lesson to other countries and also to us in our future educational relations with the rest of the world. The gist of the lesson is: Educational ideas are common currency among nations. The more they circulate, the better for all. The institutional framework of education, on the other hand, can not safely be transferred from one nation to another.

Now as to the carriers of educational ideas. The United States has latterly conducted exchanges of students and teachers, or been involved in such exchanges, on a larger scale than any other country. It has likewise been active in supporting centers of educational information both at home and abroad. A study published two years ago by David A. Robertson, the assistant director of the American Council on Education, listed 114 different organizations concerned with international educational relations and having either headquarters or representatives in the United States. Thirty-nine of these organizations are instrumental in the exchange of professors and students. Through one or another of them professors or students or both are regularly sent to or brought from 15 different European countries, Japan, and China. In addition, individual colleges and universities offer fellowships to students from various Latin American and European countries. Even the briefest summary of the policies and financial status of these numerous agencies would far exceed the time limits of this paper. Suffice it to say that some are adequately supported; a few are generously endowed; some rely upon precarious contributions and give no promise of permanence. Some have developed efficient machinery both for selecting the students who are to receive traveling stipends or fellowships and also for placing them in appropriate institutions in America or abroad. Others follow a haphazard procedure in these matters. Out of this varied experience certain clear conclusions emerge.

First, with respect to the students who should participate in international exchanges. They should be selected with extreme care. That they should be young persons of good health and good character goes without saying. They should be adequately prepared to pursue with profit the work of the institutions in which they are to study. They should be sent only to institutions that offer work that is in line with their scholarly purposes. Those who come to the United States should have a command of English. Those who go from the United States should be fairly fluent in the language of the country they are to visit. They should be presentable, accustomed to polite social usages. And most important of all, they should be open-minded and adaptable. The exchange arrangement should provide amply for their expenses so that they can live in modest comfort and devote themselves unreservedly to their studies and to participation in the life of the country. These are not Utopian prescriptions. Exchanges are now in operation between the United States on the one hand and Great Britain, France, Belgium, and the Scandinavian countries on the other in which all of them are met. In so far as the beneficiaries of other exchanges have fallen short of these requirements of character, personality, and scholarly preparation just to that extent have the exchanges been unsatisfactory.

American experience has likewise shown that the students who profit most and who give most, both to the foreign country during their sojourn there and to their own country on their return, are the mature students. More and more, therefore, the persons in charge of exchanges are tending to restrict participation in them to those who are studying for advanced degrees in science and the humanities, or for professional degrees.

But after all it is the visiting professor whose contribution to the circulation of educational ideas is immediate and authoritative. What the best students get and what they give may be described as of slow penetration. I do not belittle it. But generally it becomes effective only after a lapse of years. The exchange professor, however, if he is a person of magnetism, of insight, and of interpretative power—and I emphasize these qualities because unfortunately some exchange professors possess none of them—may at once exercise an enormous influence upon the thinking both of the country to which he is accredited and of his native land. Let me illustrate.

Through the services as visiting professors of former President Wheeler, of the University of California, in Germany, and the late Prof. Barrett Wendell, in France, those countries received a masterly interpretation of American education and American social ideals. These gentlemen brought back to the United States equally incisive and sympathetic accounts of the moving ideas of the nations that

had entertained them. More recently two foreign observers, Professor Caullery, of France, and Prof. E. R. Holme, of the University of Sydney, after visiting various American institutions, published notable critiques of university education in the United States. Professor Holme's book, indeed, is the most useful study of American higher education that has yet been written. It is of particular interest to this meeting because it presents a kindly but impartial evaluation of American educational practices, with the specific purpose of showing which of them may be suggestive in the reconstruction of Australian universities. These are but a few of the many conspicuous examples of the influence of exchange professors that might be cited out of the American experience.

For my own part, I wish the disparity in numbers between exchange professors and exchange students were not so great. I would not have fewer of the latter, but I am sure that if we could have more of the former, and particularly if we could have more from the Orient and from Latin America, the interchange of educational ideas would be effectively advanced.

Yet those of us who are professional educators should not forget that the exchange of students—and of professors also—is designed to serve other and broader objects than the circulation of educational ideas. The primary purpose of this almost world-wide movement is the promotion of international understanding. It is because this is its purpose that the movement everywhere commands the support of the leaders of public opinion.

And the movement has within the last decade attained a magnitude of which few persons are aware. Accurate statistics are not available. At a very conservative estimate, however, not less than 30,000 young people are now studying in foreign lands. Such a cultural migration of the world's most promising youth has no parallel in history. What will come of it? Is provincialism ineradicable? Is race prejudice, in the widest sense of the term, a permanent disease of the human mind? Will these chosen young people, when they rise to positions of leadership in their native lands, give us a new statesmanship, an accelerated progress in education, a new respect for other peoples, a new international morale? We must wait some 20 years before these questions can be answered. Meanwhile we look forward with a great hope.

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The chairman reported that, because of illness, Señor Novo, who had expected to address the conference on this topic, was unable to be present.

# THE EXCHANGE OF EDUCATIONAL IDEAS IN AUSTRALIA

*By S. H. Smith*
*Director of Education, New South Wales*

In Australia the exchange of educational ideas has had some consideration. We pride ourselves on the fact that our primary system of education is eclectic. We subscribe entirely to the views of former speakers that the system of education suitable for one country is not necessarily suitable for another. Practices and devices are not necessarily transferable to another country. Every student of education must consider the subject from the viewpoint of his own environment.

The Australian system was introduced from Ireland in 1848. Prior to that a multiplicity of systems—or lack of system—prevailed. Points from other systems good in themselves and suitable to the needs of Australia were adopted, with the result that the system now is entirely unlike other systems, although it has the same aims and purposes. There are many points of resemblance to other systems, such as those in England and America. The system is in a continuous process of modification, grafting on other ideas from other countries. We owe a debt of gratitude to the United States Bureau of Education for the regular papers received, which are of great assistance to us.

We are able to introduce new ideas from other countries because we believe in the doctrine of freedom in the school system. We believe in freedom for teachers; we train them, then trust them. A fairly large proportion of teachers go abroad, and many have studied in American colleges. For example, Teachers College, Columbia University, has provided us with facilities for further education of many of our teachers and has also provided members of the teaching staff for Australian teachers colleges. Broadly speaking, every new idea put forth in the educational literature of the day is weighed and balanced by our educational leaders with the view of deciding whether it should be used to modify existing practices.

As regards the exchange of university professors, a short time ago the council of the universities considered this question. After long discussion they came to the deliberate conclusion that the only practicable form of exchange would be to invite visiting professors to come to Australia and deliver a definite series of lectures. It was felt that, in the interest of the Australian student, a man who was thoroughly acquainted with his own environment should be the regular teacher, and the visiting professor might supplement the work of the regular teacher. Whether the university council can be induced to change their policy remains to be seen. There seems to be little prospect at the present time of bringing about an actual exchange.

During recent years we have had several visiting university professors from England and other parts of the Dominions, who have come and delivered lectures. Possibly in the near future we can make arrangements for visiting American professors to come to us.

We have a number of traveling scholarships. These scholarships are largely donated by wealthy men of the community for Australian youths to go to other countries for further education. They usually go to Oxford or Cambridge, as our people usually desire to send the students to those universities. However, a few of our students have gone to France. All students are encouraged, as far as possible, to go abroad to get the education that contact with other environments can alone give them.

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*Discussion*

Doctor Richardson. What Mr. Smith said concerning exchange teachers or professors coincides with our experience at the University of California. We have tried the plan of exchange professorships, but in practice it is seldom possible to bring about an exchange that is mutually satisfactory.

Our present plan is to call professors from other institutions to teach for considerable periods of time. Long periods rather than short are preferred. Prof. John H. Muirhead, of England, is now filling an engagement of two and one-half years in our department of philosophy. It would be difficult to overstate the inspiration and good he has brought us. We have also at present Prof. John Myers, of Oxford, as professor of ancient history for a period of six months, and a professor of chemistry from Bristol, who is spending one year with us. It is our policy to have on our staff three or four men of outstanding scholarship drawn from foreign universities. It happens that the men most suited to our purposes have usually come from England. They understand our point of view and are able to teach in such a fashion that our students can profit by the work. One year we had an eminent scholar from Sweden, who was unable to reach our students, though the faculty received much help from him.

Mr. Eiben. After our professors give satisfactory service for several years they are then approached and asked to go to Europe to study for a doctorate. In the past they have usually been sent to Fribourg, Switzerland. By this plan, the professor comes back with a European doctorate; the students look up to men with such degrees and experience; the European viewpoint is brought to the school. On the other hand, the younger professors have something to work for when they have the promise of a three-year course in Europe.

We have had professors from Hungary and France, and at present, one from Germany.

We encourage professors to make good, and hold out a reward which in their eyes seems very substantial. The university gets increased service and new inspiration from abroad.

This policy has been in practice for the past 15 or 20 years and, no doubt, will be continued.

Doctor TOZZER. Harvard University has had some experience with exchange and visiting teachers which may be of interest at this time. The exchange between the Sorbonne and Harvard has been in successful operation for many years. Prof. Barrett Wendell who was mentioned by a previous speaker, was on this exchange. A second, maintained by James Hazen Hyde, of Paris, provides a visiting professor to several of the provincial universities of France. Before the war Harvard also had an exchange of teachers with Germany.

The introduction of the general examination and a modified form of the Oxford tutorial system at Cambridge suggested to President Lowell the exchange of Harvard and Oxford tutors. This mutual arrangement has been in operation too short a time for its success to be determined.

The difficulties of arranging a properly balanced exchange are many, and foundations established to finance the presence of foreign visiting scholars at Cambridge, with no idea of a mutual exchange, have worked rather better. The newest and broadest foundation of this kind is the Stillman professorship of poetry, the first incumbent of which was Prof. Gilbert Murray. Poetry is interpreted, according to the late Charles Eliot Norton, to include all the fine arts. Professor Murray, in addition to giving a series of public lectures, held conferences with the students and was available at all times for consultation. The success of this visitation is unquestioned.

Within the United States Harvard has several different arrangements of exchange with other American universities. Princeton and Harvard regularly exchange teachers in the fine arts. Harvard also sends annually two of its teachers to six western colleges. Each man visits three institutions, remaining for a month in each place, and taking over the entire conduct of a course. This Harvard exchange with western colleges has proven to be a success in every respect.

Finally, the Lowell Institute, with its annual provision for eight or more series of lectures, has been a most important factor in bringing foreign scholars of note to Boston and Cambridge.

Mr. SMITH. Has the university been able to get equally eminent men to exchange?

Doctor TOZZER. This is, of course, one of the great difficulties of an exchange. In the case of the Harvard western exchange no attempt is made to weigh the relative importance of the men. As a rule, Harvard sends its more mature teachers to the West, while the six colleges on the list are more apt to send their younger men to Cambridge for further research rather than for teaching.

Doctor HARADA. I would agree with some of the previous speakers that no wholesale introduction of educational systems of one country into another where conditions are different can be wholly successful.

Japan, so far, has been imitating the educational systems of many countries. We have profited by learning from these various countries, but we have also received some damage. Dr. David Murray made the education law for Japan and started the compulsory system of education in Japan. This system has proved a great success. We have introduced into Japan medical education from Germany, military education from France and Germany, gymnastic education from Sweden, art from Italy, and technical and commercial education from America. And we have derived great profit from this practice. But I will say that these various systems of education are now being, so to speak, Japanized, and we are going to make a national system of education.

As to the exchange system of education, we have had some experience in Japan. The difficulty or handicap is that the students or professors coming from foreign countries to Japan can not speak Japanese, and the professors from Japan to other countries can not speak the language of the country to which they go.

In the last few years, we have had many prominent professors from other countries come to Japan to give lectures. The president of Princeton University was appointed to come to Japan at the time of the Great War, but the plan did not work out because of the war.

From time to time, we have invited men, among them some medical professors, to come to Japan to study and at the same time give us some information about medical education. I think that I agree with the idea expressed by the preceding speakers that it is more profitable to engage professors to stay in a country for a long period. We have found that professors coming from other countries to stay for a period of from two to three years are very satisfactory.

As to the exchange of students, we have been sending students from several of our educational institutions to American schools, and there are many scholarships being offered Japanese by American colleges. There is a very interesting experiment now being carried on by the Japanese. We are sending not only university students to other countries, but also students in the secondary schools. Last year about 50 of them were sent—mostly to the Pacific States of the United States. This experiment has proved very successful, and we are going to send more students from our secondary schools, not only to America but also to several European countries. Those students who were sent to American schools from Japan were invited to different schools and also to private homes, and in that way they not only learned about education but also about the home life and the ideas of the American people.

Later we had an exchange of good will between the children of Japan and America. Many beautiful dolls were sent by American children to the Japanese children and they were heartily received. One doll was received by the princess, daughter of the present Emperor of Japan, who was delighted with it. Japan is now preparing to send some Japanese dolls to the American children.

Along this line of exchange of educational ideas, let me say that the Japanese Government has decided to return the Boxer indemnity fund to be used for educational purposes in China, as was done by America.

We have organized a large committee in Japan, which is made up of Chinese and Japanese. They have established laboratories in China, one for cultural pursuits in Peking, and one for scientific purposes in Shanghai. The committee is going to spend millions of dollars, and many Chinese and Japanese professors are already engaged to work in these laboratories.

At the present time, we have from 2,000 to 3,000 students from China studying in Japan. The Japanese Government and people give as much assistance as possible to these students; and, of course, quite a number of students from Japan go to China to study.

Some years ago Baron Chijuchi, Minister of Education in Japan, and the president of the Tokyo Imperial University were invited to give a series of lectures at London University. As a result of their studies they published a book, which was a great success. It is considered the best book in its field published so far, and is one of the most valuable contributions in the English language.

So, from our experiences, I am led to agree with the previous speakers, that the exchange of professors and students between different countries is and will always be a great help.

Doctor Murakami. I agree that it is advisable to send professors for a longer period than we have been doing. We had very distinguished professors from Europe and America come to stay from one to two years in Japan to teach the students of our schools. They come to teach in most cases, but it would be best if they would at the same time study Japan. This would, I think, help to make Japan be understood and, likewise, would help Japan to understand other countries. Some professors from Japan go abroad to learn methods of research work, and they are able to improve their own methods after they come back from the different countries with new ideas. We are profiting very much in this way. These men stay from one to three years. Previous to this time, we had men stay for only a short time, but from this year on we are going to have these professors remain for three years. Perhaps not all of them, but most of them will be required to stay for a period of three years; and they will not visit several countries, as they have been doing, but remain in one country

and thoroughly study their subjects there. I think much good will come of this.

Doctor LEE. In matters of modern education China is a learner. In the eighth and ninth centuries China was a teacher to all the oriental countries. She is now a learner because of lack of advancement in science and education. The movement toward modernization of China's educational system did not begin until 1894, although there was a tendency before that time to introduce the modern type of educational system by the Christian missionaries.

At first, China had to depend on educational leaders from abroad. The first president of the new National University was an American missionary, Dr. W. A. P. Martin. The American missionaries were the first people to introduce the modern system of education into China.

It was Dr. Richard Timothy, an English missionary, who was instrumental in founding the Shansi University, in Shansi Province, after the Boxer uprising.

Most of the leaders of China of to-day are products of the missionary schools and colleges and of the universities of America, Great Britain, Germany, France, and Japan.

China followed the example of Japan in establishing the new educational system. At first, the different systems of education were adopted from the different countries, and as a result a sort of "chop-suey" system was put in use. It was entirely unsuitable to China. Chinese educators, after much study of existing conditions, finally worked out a system which promised to be very successful. Since 1911 the country has been in such a political chaotic state that the system has not been developed as it might have been.

China has a population, according to the latest estimate, of 436,000,000. Under the Manchu régime, all education was for the wealthy and no attempt was made to educate the common people. Education was more or less a private enterprise.

After the establishment of the Republic, Chinese educators besides devoting their attention and energy to the development of the higher institutions of learning, had to give much thought to the problem of educating the many millions of illiterate people for citizenship. Finally, the mass education movement, under the leadership of Mr. Y. C. Yen, was inaugurated, and after five or six years of experiment was found to be a success. Many "foundation character schools" were established. By 1925, over 3,500,000 men, women, boys, and girls graduated from these schools. The mass education movement is still going on and illiteracy is decreasing considerably.

Dr. John Dewey and Dr. Bertrand Russell, two great western thinkers of the present day, visited China a few years ago and gave lectures to the various groups of university and college students.

Their influence in molding the thought of the Chinese youth was very great. They made the Chinese students think more of the importance of educating the great masses of illiterate people to become citizens of the new Chinese democracy.

The United States of America generously returned her share of the so-called "Boxer indemnity" to China in 1908. China decided to use it for educational purposes. She also decided that the money should be spent in America. A college (known as Tsing Hua College) was established in Peking for the purpose of preparing students to go to America to study. Each year from 60 to 100 students are sent to America to enter the various institutions of learning.

We are very happy to see that our neighbor, Japan, has followed the example of America by returning to China her portion of the Boxer indemnity for educational work in China. Great Britain lately has also taken measures to return her share for similar purposes.

Teachers and professors from America, Great Britain, Japan, and other countries are engaged or invited to teach or to give lectures in the various institutions of learning in China. Chinese students studying in other countries are trying to interpret the China of the past and present to the people of other nations. In this way we find it possible to exchange educational ideas and ideals among the nations.

Professor PICHARDO. We have much need for an exchange of professors between our country and others. Year after year we are sending many teachers and students abroad, mostly to the United States. Our system of education is much the same as is that of the United States, due largely to the help we have received from the United States. We need commissions or teachers from other countries, not so much to teach subjects as to teach the ideals and life of other countries.

Through one of our departments we handle the matter of obtaining teachers from other countries. We have had some notable visiting professors, such as Doctor Dewey and Doctor Monroe.

We hereby extend a hearty invitation to the teachers and professors of the different countries to visit Mexico and give us information regarding their own lands.

Mr. SU'A. I feel that Samoa is a very weak link in the international chain of education. It is necessary to remember that in Samoa we only teach up to the eighth grade. However, we have some Samoan teachers in Utah, and students in Hawaii, on the mainland, and in New Zealand. It is also necessary to understand the children's environment in Samoa. Many experienced teachers from the United States have made failures in American Samoa because they could not understand the children and they applied United States methods of teaching to the Samoan people.

We have the same problem in Samoa as China and Japan, but we have no illiteracy.

There are three nations responsible for our educational system. France sent Catholic missionaries, England sent Wesleyan missionaries and members of the London Missionary Society, and then the Mormons came from the United States. It is very important in Samoa to have American teachers as principals in our large schools and to have a good, independent Samoan teacher as his assistant. The people there are hungry for education and their appetite increases.

The social system of the chiefs makes it very difficult for women teachers to be successful, although women teachers can do good work under the principalship of the men teachers. The greatest necessity of Samoan education now is good teachers. I am the only one of 42 teachers who has been out of Samoa. I intend to encourage the children of Samoa to come to Hawaii or to America for education.

I extend an invitation, in the name of the government of American Samoa, to teachers and professors to come to Samoa and lecture. Some Samoans believe that Samoa is one of the largest countries in the world, so, if possible, I will take back with me some lantern slides of different countries to exhibit in the schools.[1]

Miss Thompson. The aim of the National Student Federation of the United States of America is to promote national understanding through committees of various races. Each country has student organizations. The present project being emphasized is that of establishing friendly relations between students of the Pacific.

The central office is at Vassar College, Poughkeepsie, N. Y. This office is a clearing house for the problems of underg aduate life of students. Information which may be of service to other countries is available on communicating with the vice president of the organization at Vassar College.

Doctor Richardson. The group of Japanese students who visited the Pacific coast came to Berkeley and were received in various homes. Our people were greatly pleased with them. I have rarely seen a single event which promoted such good will and friendly feeling as did this visit. Ambassadors like these students can do a great deal to further good will among nations.

Mr. Kennedy. Nineteen or twenty years ago I was a student at Manchester College, Oxford, England. It was then the custom of the college to invite teachers from other universities and other countries to visit my college and gives courses of lectures. During my term I had the privilege of hearing two very distinguished men, namely, Sir Henry Jones, professor of moral philosophy at the University of Glasgow; and Dr. William James, of Harvard. We had students from other countries—one from Hungary, one from India, and one from Japan. The latter, who was a special friend of mine, is

[1] A. H. Ford, of the Pan Pacific Union, promised lantern slides of Hawaii and offered room and board or some students from Samoa coming to Hawaii for education.

now a distinguished politician in his own country. The present principal of the college, Dr. L. P. Jacks, spent three years at Harvard.

Following the primary schools in New Zealand we have high schools, technical schools (vocational), agricultural schools, and domestic science schools—the latter for girls only. Our chairman to-day referred to the difficulty that teachers had to meet, because students, in many cases, did not know what vocations they would like to pursue. Personally, I can appreciate this difficulty and well remember when my father asked me many years ago what I should like to be; I could not answer him, for the simple reason that I knew little or nothing about the various professions and callings in life. To me there seems a great need for the cultivation of the pupil's imagination—he should be awakened to the bigness of life and be made to feel something of the poetry and beauty of man's daily work. All the trades men follow to-day have had a wonderful history back of them. To know something of this and to have a little more knowledge of these callings would make the pupil's choice of an occupation easier. Proper instruction in a correct understanding of the importance and value of work in life is most needful. I agree with Dr. L. P. Jacks (my old tutor) when he says:

> Strictly speaking, nothing can ever matter quite so greatly to an industrial civilization as the character of its work. All hinges at this point. The characters of men and women (as we conceive them) are essentially identified with the work they do. This it is which, when all other influences have been allowed for, makes them what they are. To say that a man makes his work means nothing till we see that his work also makes him. Does he wish to improve himself? Let him improve his work and one morning he shall wake up to find himself a better man. (From *The Faith of a Worker*.)

Mr. KIM. The Korean alphabet is very simple—only 25 letters. Any Korean can read and write. Scholars of olden times studied Chinese, and after using Chinese characters considered the Korean language too easy; they called it the "women's language."

At the present time we have the linotype, typewriter, multigraph, etc., in the Korean language. Progress has been very rapid in up-to-date printing methods. In fact, the first movable type was invented in Korea 20 years before Gutenberg started in Germany.

There are about 200 Korean students scattered over different parts of America. Many Korean young men and women have returned to Korea and others will probably return.

The educational system in Korea now is largely patterned after the Japanese system. The Korean population is estimated at over 20,000,000. The present problem is to provide educational facilities for the children. The schools can not accommodate all the children, who are very eager to learn and study under any circumstances.

Adjournment.

## *Tuesday Afternoon, April 12*

*Topics: "Establishment of Centers of Educational Information" and "Evaluation of Student Credentials"*

*S. H. Smith, of New South Wales, Presiding*

The session was called to order at 2 o'clock by the chairman, who said:

We have a small body of men in Australia who desire a bureau of education along the same lines as the United States Bureau of Education. We are not hoping to undertake all the duties of the United States bureau, such as trying to increase the number of reindeer in Alaska, etc., but we hope to institute a bureau in Australia to deal with those questions of educational research which may be so helpful to the State educational departments.

Education is largely a question of finance. It is true of education more than of most things that we cannot impose an educational policy on a people. We hope to get our people to desire such a bureau and then we expect to have no difficulty in securing the funds.

The monographs sent to us by the United States Bureau of Education have been most helpful. There is a similar organization in London, called the Bureau of Special Inquiries and Reports. We hope that one of the results of this conference will be to give an impetus to the proposal to found such an organization under federal control in Australia.

## *ESTABLISHING CENTERS OF INFORMATION*

*By T. Harada*

*Of the Ministry of Education of Japan*

There will be, it seems to me, no objection to the establishment of the centers of educational information in the countries bordering on the Pacific. Without some such convenience what the present conference may accomplish will not be of much value. Permanent centers of information working between the conferences are extremely

desirable. There are not a few hinderances to overcome; the greatest handicap being the difference of the languages of the Pacific countries. The Japanese language, I confess, is not an easy language to master, and English is a difficult one to acquire by foreigners. However, a partial remedy may be found in the extensive use of the English language. French is somewhat used, and Spanish is known among selected scholars, but to the general public almost unknown. But English is taught in all middle and higher schools. Japanese students are able to read and write English, though they are not able to speak it fluently. The extension of the English language may be true in many other countries represented in the conference.

As to the purpose of the exchange of information it is needless to say that it is to distribute all kinds of information relating to education; the systems of education, the organization of schools, the architecture, the equipment, the method of teaching, the ideal and spirit of education, the results of scientific researches, and what not. Each country will be benefited by such exchanges from time to time, and they should of course be up to date to make them useful.

Coming to the practical side, the question arises as to how and where those centers may be established. It is largely a matter of finance, as our chairman remarked. The problem of obtaining funds to carry on our educational projects remains to be solved. On this point I have no mature idea and I have had no consultation with my colleagues. What I am speaking is purely my personal opinion.

I believe that there are a number of ways which such a bureau of information might be established. (1) For instance, a bureau or center of information might be located in Honolulu, the crossroad of the Pacific, where all educational data can be more easily collected than in other places and disseminated among the Pacific countries. (2) Committees might be appointed in all countries, say in the departments of education or in the national educational associations of the respective countries, to act as clearing houses for information. (3) Another way might be to join hands with some already established organization like the World Federation of Education Associations, which is going to meet for the third time this year in Toronto. Or we might cooperate with such an association as the Pan Pacific Union or Institute of Pacific Relations, or with the League of Nations, which have commissions on intellectual work in all parts of the world. In one way or the other the establishment of the center is a matter of sheer necessity.

I wish to say a word about student credentials. I hope something can be done in regard to the fair and capable handling of credentials. The oriental students have a great handicap in the matter of language, and I wish very much that the universities of the

United States and other countries would agree to give credit for oriental languages. You give credit to the students from Europe for European languages; why not for oriental languages, such as the Chinese or Japanese?

Another point I should like to mention is in regard to Japanese publications in English. The Imperial universities and some of the private institutions issue their catalogues in English. There are also laboratories and scientific institutions which publish their documents in English. During the last 20 years the number of these laboratories has increased very rapidly. I hope more effort will be used in the future by English-speaking countries to obtain these publications from Japan.

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*Discussion*

The CHAIRMAN. I wish to remark that Japanese is one of the optional foreign languages taught in the universities of Australia. We regularly send for Japanese professors to teach at our universities. You may be interested to know that many of our students study Japanese. In Australia the Japanese language ranks with the European languages. We also have teachers from Japan who are engaged to teach Japanese in our high schools.

Mr. ABEL. Do the teachers colleges of Japan give instruction in the educational systems of other countries?

Doctor HARADA. Yes; they do.

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## *THE INSTITUTE OF PACIFIC RELATIONS AS A CENTER OF EDUCATIONAL INFORMATION*

*By Arthur L. Dean*

*Of the University of Hawaii*

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I wish to present to your notice one specific effort now being made toward the establishment of a center of information and education. The field in which the center undertakes to operate is that of international and interracial relations in the Pacific. It rests upon two assertions of fact which I think are almost axiomatic. The first self-evident fact is that education is a continuing business. We are apt to speak of education as something analogous to the measles. A child is exposed to the disease, takes it, recovers from it; and we feel that he is thenceforth immune to it. When a child is through school, he is often considered educated. But if nothing more is done for him, his mind atrophies; only his body goes marching on. Now it seems to me that it is self-evident that any education that is valuable and important is a growing and a becoming. If we achieve anything

worthy in education, we may expect that men and women will continue to grow with the passing years in intellectual power and in wisdom. The death of a man really takes place when his education stops. Educational death should coincide with bodily death.

The second self-evident fact, that truth, although sometimes dangerous, is a desirable thing. Many of us are afraid of truth, especially in the matter of international and interracial relationships. We are afraid to tell the truth about some events in our national history lest it might have a serious effect on patriotism. We are afraid to tamper with prejudices and time-honored recollections which have led us to believe that our country is the greatest country on earth. We are afraid to learn of the good qualities of the people of other countries for fear we would not be able to kill their citizens so cheerfully in the event of war. But we have learned that it is desirable to know facts and that truth should be spread amongst us. Let us know the truth and it will make us free.

Education is a continuing business, in which we grow progressively stronger. It follows that any plan or organization which is directed to the ascertaining of facts about the countries bordering on the Pacific, and making this knowledge prevail, is working in the field of education as well as that of promoting desirable international and interracial relationships.

We see with the passing of the years that distances grow shorter both in space and time. We see the common man respected, and the average intelligent man having more and more thought for the relationships between nations. With the rise of democracy each man counts for more in controlling the policy of his country. With democracy goes added individual responsibility in international affairs.

Out of these assumptions has grown an institution which is now beginning to find itself. I am speaking of the Institute of Pacific Relations. What we need in the Pacific area is a real knowledge of one another, coupled with a spirit of good will and scientific inquiry. The Institute of Pacific Relations had its first conference two years ago. There we discovered that men of different races, religions, customs, and interests could meet and discuss the most delicate subjects, if only good will was combined with intelligence.

We have discovered that there are great fields in which we have insufficient knowledge, so that research has been inaugurated by the institute in the interracial and international relations of the Pacific countries. One function of the institute is to discover facts that we do not now possess and must possess if we are to act wisely. Let me cite a single example. We are making a critical study of the texts in geography and history used in the United States, Canada, China, Japan, Australia, and New Zealand. We suspect that the information in our present texts is neither accurate nor adequate and

it should be both. The texts may need to be rewritten in order to promote understanding in the Pacific. There are great bodies of information that we do not yet possess and which we need in order to grapple with the problems of the Pacific and have an understanding of the various fields of knowledge which one nation possesses and another does not.

A second function of the institute is to gather all the known knowledge about the Pacific peoples and their institutions, policies, economic conditions, commerce, religions, philosophies, works of art, and history. In the course of time we hope to have at the secretariat in Honolulu the most complete catalogue to be found anywhere of knowledge about the Pacific region and its peoples. It should be a key to all the data we now possess and of the greatest service to those who are interested in those phases of education which have to do with the relations of the peoples and nations of the Pacific.

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*Discussion*

Mr. Abel. With regard to the establishment of centers of educational information, I wish to call the attention of this section to the considerable amount of work that is being done in the teachers colleges and schools of education in the United States. A canvass made a short time ago of the curricula of these institutions showed that about 100 of them are offering courses in comparative or foreign education. Most of these are short courses intended to give prospective teachers a very general view of the systems of education in some of the larger countries of the world. They are based on one or another of the relatively few books that have been written on comparative school systems and the students do not as a rule have access to any great quantity of material, either in the original or translations, direct from the countries whose school systems they are studying. Nevertheless, these attempts to acquaint teachers in the United States with the organization, aims, and activities of the school systems of other countries are important. They represent one method of providing centers for the distribution of well-selected educational information.

As yet, no organization of this group of teachers of foreign and comparative education has been undertaken. Neither has there been any attempt to agree upon the most valuable subject matter for the courses or the library equipment necessary to make them most effective. Something of that kind may soon be begun.

A few of our larger universities, notably Columbia, have definitely set about the collection of foreign educational data and documents of all kinds, including textbooks, reports, laws, decrees, etc. They are publishing information about foreign schools and are giving

strong courses in comparative education taught by men and women who have traveled and studied in the countries about which they are teaching. Such institutions form effective nuclei for the interchange of educational thought, but at present the number of such centers in our country is very limited. Perhaps there need never be very many such centers, but each one should be strong and active.

At Washington, both the Library of Congress and the library of the Bureau of Education contain large amounts of material relating to education in countries other than the United States, and an earnest attempt is made to secure all important books and documents shortly after they are published. Some 150 school journals from about 63 countries come regularly to the bureau. In addition the bureau is constantly asking for and receiving pertinent information about educational matters abroad through the consular and diplomatic offices of the United States. The bureau intends to be and is a center for the distribution of this information.

I mention these things to indicate to you some of the ways in which we of the United States are trying to disseminate information about the schools of other countries. I have cited merely a few examples. You will understand that I have not tried to give a complete account of our activities in this line.

Mr. KUROKAWA. In regard to the establishment of centers of information on international education, I wish to say that the United States of America is doing perhaps more than any other country to-day. According to a report of David A. Robertson, assistant director of the American Council on Education, at Washington, there are already four American centers of educational information established in Prague, Geneva, Berlin, and Rome.

These American centers are, according to the report referred to, conducted under the joint auspices of the Institute of International Education and the American Council on Education. In the December number of School and Society there appeared an interesting report of an observation of oriental countries, with the view of establishing such a center in the Orient by Dr. Stephen P. Duggan, director of the Institute of International Education.

Mr. Robertson further reports a plan of his committee to establish centers both in the Far East and South America. This committee is now attempting to raise funds to carry on the work of such centers.

We have delegates here both from Washington and New York who, I believe, know more about this matter than I am able to report. For this reason, if such delegates can give to the conference more definite ideas concerning the scope and activities of the American centers abroad, I am sure it will be of a great benefit to us all in our further deliberation on the subject of educational centers.

Doctor CAPEN. May I preface the answer which I will try to make to Mr. Kurokawa's questions by a comment which is not altogether

irrelevant. For a number of years I was a member of the United States Bureau of Education. I resigned from the office several years ago and now have no connection with it. It has been especially gratifying to one who knows the bureau and is familiar with the handicaps under which it has worked to hear the spontaneous tributes that have been offered during this conference to its influence and standing in other countries. They have confirmed my own impressions. The United States Bureau of Education is and always has been quite as well thought of abroad as at home. It is even more highly regarded abroad than in some of the circles in our own country, where a favorable opinion is especially to be desired. I refer, of course, to Congress. All of us who have at heart the welfare of American education hope soon to see the Bureau of Education as adequately supported for the tasks it should perform as are other governmental agencies. It could do many times as much if there were more money. The present Commissioner of Education has been unusually successful in adding to the resources and extending the scope of the bureau; but he would be the first to admit in spite of these advances his admirable office is not yet equipped to render certain types of service which have turned out in the last dozen years to be exceedingly necessary.

In order that some of these services might be performed, the American Council on Education was established. It was organized by the universities and the various national educational bodies. It is supported by them and it represents them directly in the study and promotion of policies and cooperative activities that they judge to be important. One of these activities is operation of the agency that is known in Europe as the American University Union. The union had its origin during the war. It began as a club in Paris, maintained by the universities for American university men in service overseas. Later a branch was set up in London. After the war our universities felt the need of educational outposts in European countries where information concerning European universities could be secured at first hand, where our students abroad could be properly guided, and where foreigners could learn what they desired to know about our institutions. The club was therefore transformed and continued as the official projection of the American universities.

It now has offices in London and Paris. These two offices cost last year less than $30,000 to operate. They did a volume of work, however, that was altogether surprising in view of the small support. Two distinguished American professors about to have leave of absence are appointed annually as resident directors. To all intents and purposes these directors, one in Paris and one in London, are educational ambassadors. Because they have come to be so regarded in the countries to which they are sent, the offices of the union have

been accomplishing something less tangible but quite as valuable as the routine functions for which they were established. They have become centers for the promotion of intimate personal contacts between the educators of America and those of the European nations, centers in short for the creation of the same kind of understanding and friendly int rest that have made this conference so inspiring to all of us who have participated in it.

Of almost simultaneous origin with the American University Union is the Institute of International Education, which was established by the Carnegie Endowment for International Peace. The institute renders a variety of useful services. It publishes monographs and bulletins relating to educational conditions in foreign countries all over the world. It has also issued certain publications designed to assist foreign students who plan to study at American institutions. Each year since the war there have been many European and a few oriental professors who were willing to come to our universities to deliver courses of lectures, or go on tour through the United States. The institute has assisted our universities to secure the services of these gentlemen and it has helped them to appropriate engagements. This office likewise administers several groups of exchange scholarships, such as those providing for the exchange of students between the United States on the one hand, and Hungary, France, and Czechoslovakia on the other. All of these exceedingly useful services, and many more that I have not mentioned, the institute has accomplished on an annual budget not much in excess of $30,000 a year.

The CHAIRMAN. If there is no further discussion of the matter of establishing centers of educational information, we will now take up the next topic on our program, "The evaluation of student credentials."

## *THE EVALUATION OF FOREIGN-STUDENT CREDENTIALS*

*By James F. Abel*

*Associate Specialist in Foreign Education, United States Bureau of Education, Washington, D. C.*

The members of this section understand, of course, how important it is that students who go from the school system of one country to that of another—especially if they have reached college or university status—should be placed where they can study to the best advantage and take their training to the satisfaction both of themselves and the institutions in which they are registered. With us in the United States, the foreign students, whether residents, nonquota immigrants, holders of scholarships or fellowships, or student laborers, are earnest industrious people whose time is valuable and who can not afford to waste it either by repeating work here which they have already done

abroad or by attempting studies for which they are not prepared. At the same time, our colleges and universities are so crowded with citizen students that they in their turn will be justified in accepting only the stronger ones from foreign countries. Much the same condition of affairs exists in the schools of every country.

The large and increasing number of young folk that are annually moving into alien countries to study must have a strong influence on the trend of international affairs. Placing them properly in the differing school systems which they enter needs careful consideration both from the angle of immediate justice to the individuals and the promotion of better international understanding and appreciation.

Making correct, accurate allocations of foreign students is difficult. In the United States, college and university registrars and committees of admission are seldom, if ever, trained in the fields of foreign and comparative education and are sometimes entirely at loss as to what to do with the alien student. Both student and registrar have natural feelings of national and institutional pride that must to some extent be laid aside if the situation is to be handled fairly.

The organization of education into primary, secondary, and higher varies greatly in the different countries, so greatly that comparable statistics of culture are not obtainable, and the completion of any phase of training in one country is not evidence of the completion of a like-named phase in another. As broad examples, the secondary school course in Europe commonly covers 8 years; in Latin America, 6 years; in the United States, 4 years; and there are many exceptions to this rough, general statement. The graduate of the European secondary school usually claims to be on a par with those who have completed the lower division of college in the United States. The secondary school of Latin America grants a bachelor's degree, though graduation means in most cases not more than 10 years of school training, all told, including primary and secondary.

The establishment of school systems in the newly created or recreated nations of Europe; such changes as were recently made in the school certificates issued by the Scottish Education Department; the political and educational upheavals in China and Russia; and other similar if lesser changes going on in the school systems of other countries, all add to the work of anyone who wishes to have any adequate knowledge of credential equivalence.

High schools in the United States graduate pupils who have earned a certain number of "units," usually 15 or 16. Colleges and universities grant the bachelor degree on a fixed number of "semester hours," generally 120. No other country has such a system of measuring the time service in either secondary or higher institutions, and it seems improbable that any will adopt it though a few New Zealand educators favor it. The evaluation of a certificate of matu-

rity from a gymnasium in Europe or of a bachelor's degree from a colegio in Latin America into our units or semester hours is practically impossible, yet some of our associations of secondary schools and colleges have set up standards that if rigidly adhered to will require that such an evaluation be made even to an extreme degree of fineness.

The kinds of diplomas, degrees, certificates, promotion cards, class books, licenses, etc., that are issued, and the requirements which must be met before each is granted, while of course not limitless, are very numerous and the regulations governing them are complicated and subject to much change. Within the United States, where each State administers its own school system and institutions of higher learning are largely free to set their own standards, the range of achievement represented by credentials of similar name is wide. When we have to consider 60 or more countries, in several of which the school systems are not at all centralized and the universities are independent corporations, the situation is almost proportionately more complex and difficult to understand.

By no means all the students who go from one country to another have followed in their fatherlands the scheme of training designed to lead to university work and a university degree. Many have had their schooling in some of the various kinds of middle, lower technical, commercial, and vocational schools that are intended to prepare workers for minor positions in the trades and industries. Later in life not a few of these people desire a higher education in a foreign country. If they are capable they should be allowed to attain it, but the determination of the worth of their credentials is very difficult. A policy of admitting to a university or college no foreign students except those who can enter such institutions in their own countries could be adopted, but that seems neither fair nor advisable.

The language question is troublesome from wo angles. First, the institution should know that the student is familiar enough with the language of instruction to profit by courses in it. He may have studied it in the schools of his native country but often he has learned it as a matter of necessity in his contacts with the people of the place to which he has removed. In either case he can not be expected to have the same knowledge of the language and literature that the native has but he must by some means or other demonstrate that he can grasp with considerable accuracy any thought expressed in it. Different institutions determine this in various ways, such as written or oral examinations and personal interviews. There seems to be a need for some study of the adequacy of these tests and the working out of a more standardized procedure.

Second, consideration should be given for proficiency in the mother tongue. The student from Denmark, for instance, who has taken

the thorough training in the Danish language and literature that is offered in the gymnasia of that country should have credit for this basal culture when he enters schools abroad even though those schools do not give courses in Danish.

These are a few of the problems—I have not enumerated them all by any means—which the evaluation of foreign student credentials involves. The specific interest of the Bureau of Education in this question lies in the fact that in the past eight years colleges and universities have been more and more seeking advice and information from it in these matters.

The bureau acts only in an advisory and fact-giving capacity and upon request. Its opinions are not binding on the institutions that ask for them. Credentials are evaluated only at the request of some institution, not at that of the persons to whom they are granted. Each case is handled on its individual merits. Up to March 20 of this year, a total of 650 cases, representing all stages of training from about the equivalent of the sixth grade in a school of the United States to post-graduate university work of two or more years, and coming from 63 different countries, had reached the bureau. Records, including the complete correspondence, copies of the credentials, and the references to the sources of information upon which the evaluation is based, are kept of each case. From these records and our actual experience we hope eventually to build up and publish a body of knowledge that should be valuable in a number of ways. Of course, the final determination of the correctness of evaluations lies in the later records of the students and some follow-up inquiries will probably be undertaken.

Out of our experience I shall try to offer you some suggestions to take back to your own countries to aid any of your young people who may plan to come to the United States to study. I believe these suggestions will be equally applicable to those going to other countries. Evaluating credentials, in the very nature of the process, presupposes documentary evidence of a certain amount of education. In justice to both the student and the evaluator, that evidence should be presented as fully as possible and in good form. The observance of a few simple principles of evidence will help much.

1. Credentials should be in the original, or if for any reason it does not seem advisable to present the originals, then in photostat or exact copies properly attested. Observance of this has the advantages that it allays any suspicion as to the authenticity of the documents and permits the evaluating agency to make its own translations. The latter is of no little importance. Literal translations particularly when made by persons who can not interpret the educational significance of the words, are often very misleading. The *hoch schule* of Germany is not a high school but a university; the *höhere schulen* of that country are not higher institutions but

secondary schools in American terms. An applicant from Sweden who translated a certificate to read "promotion from high school to college" was following a certain literal interpretation, but in reality he was entitled only to promotion from grade school to high school. Hungary has no junior high schools but the Hungarian words for civic or city boys' schools are sometimes wrongly so translated.

2. It goes without saying that all credentials should be dated, but many of them are not. Occasionally there are obvious mistakes in the dating. Educational systems change and develop often very rapidly and the diploma granted under one régime may be quite different in value from one of a similiar designation but of later or earlier date. Since the World War this date element has become especially important.

3. All credentials should be accompanied by a concise, detailed history of the holder's entire scholastic training, elementary, secondary, and other. The privileges the holder enjoys in his own country by virtue of his credentials and references to the laws under which they were granted should also be stated.

4. The name and location of the school from which each document comes, whether the school is public or private, subject or not to official inspection or supervision, and maintained by public, local, or national funds, should also be given. Catalogues or prospectuses of each school, if they can be obtained, should accompany the credentials. In so far as these things are lacking, the evaluator must spend much time looking up the data. He may not have sources of information from which to obtain it and often wastes hours trying to ascertain what should be told him as a matter of courtesy.

5. The purpose for which the evaluation is asked, whether it is entrance to the courses of some department of a university, advanced standing, graduate work, or the privilege of taking certain examinations, should be told to the evaluating agency. If that is done, a more definite decision can be given.

I find that most of the European countries give credentials that are in themselves fairly complete and valuable records of the scholastic attainments of the holders. The name, age, and place of birth of the student; the number of years he has devoted to each subject of study; his grades both in class and examination, together with an explanation of the system of grading; the number and date of the decree authorizing the issuance of such a document; and often the student's photograph are given. The detail and accuracy of these credentials create a favorable impression of the thoroughness of the school system. Credentials from Latin America and China are often very vague and indefinite and the holders sometimes suffer in placement merely because the data given are not a sufficient basis for proper judgment.

I trust I have said enough to indicate something of the scope of this problem of credential evaluation. Up to date I believe no widely organized attempt has been made at its solution. Our college committees of admission work independently and follow no common practice. The regulations of the several universities of Great Britain and Ireland regarding the admission as undergraduates of persons educated abroad agree generally in principle, with considerable divergence in application. The main principles require evidence: First, that the student may be admitted to a university in his own country; second, that there is a reasonable prospect that he will be able to pursue to graduation the course to which he desires to be admitted; and third, that he has sufficient mastery of English to follow courses in which it is the language of instruction. Similar principles govern in the Scottish universities.

At different times suggestions have been made looking toward more equitable and uniform acceptance of foreign-student credentials. The College Entrance Examination Board conducts some examinations abroad. Probably its work could be widened. Some one of the various international agencies now existing may be able to undertake the research work necessary to the formation of better judgments and fairer appreciations of the relative values of the training given in the different school systems. May I offer the thought that committees, not too large in membership, of competent schoolmen from two or more countries should find it possible to work out good bases for credential evaluation between the countries under consideration.

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*Discussion*

Doctor TIGERT. Some may get the impression from what Mr. Abel has just said that in the United States the Federal Government accredits students and evaluates their work. This, however, is not the case. What we do is merely in the line of service for the universities and colleges. The Bureau of Education acts as a central clearing house to give information to these institutions.

Standards and requirements are largely individual matters and the accrediting associations make their own standards. One of the difficulties in the United States is that we have no official standardizing agency. Sometimes high-sounding names for colleges correlate with the poorest quality of work. We have fake institutions pure and simple. There is the well-known case of a university in Washington, which advertised extensively in foreign countries and openly sold its diplomas. The president of this "university" and another of its officials are now in prison for using the United States mails for fraud and misrepresentation.

Mr. Smith. We have in Australia a board of experts, called a board of examiners, to evaluate in terms of Australian requirements all certificates of each candidate from a foreign country applying for admission to Australian teaching services. Each candidate is carefully examined so that none shall be admitted with lower standards or under more favorable conditions than our own students.

There are instances of students of low qualifications, through misunderstanding of their credentials, being admitted to higher institutions of learning in a foreign country than their credentials would admit them to in their own country. On the other hand, students of high credentials have been denied admission to the same institution or to others of equal rank.

I would suggest that the university or educational organization to which the application is made, communicate with the educational department of the country of the applicant or with the university which issued the credentials before granting recognition.

Doctor Tigert. We hope to have some results from the work of this conference; and I suggest that we have a general resolutions committee, and that this educational group should take definite action to give them guidance so that they may take intelligent action in reflecting our educational ideas. There are some hindrances in transplanting educational practices, as Doctor Capen has shown, but these are desirable, and Doctor Harada has suggested several different plans that might be used to bring about an international exchange. There is perennial discussion in the United States as to the kind of national agency best adapted to further the work of exchange. I would suggest, if it accords with the thought of the conference, that a committee of this section be appointed each day to make recommendations of various possibilities.

The question has often been brought to me in Washington as to what we can do about a universal language or some vehicle of exchange of international ideas. More pressure has been brought to bear from our scientific men than from our educators. They have tried to get us to adopt Esperanto or Volapük or some other international language. We might suggest some alternatives or possibilities in this line.

If it is not out of accord with the wishes of this conference, I will designate a committee to bring in a general statement or recommendation of things discussed in this part of the conference, and ask the general committee on resolutions to incorporate the material in their report. I appoint the Hon. S. H. Smith chairman of this committee, and Doctor Harada and Doctor Capen to work with him. If any of the delegates have ideas or suggestions they will please give them to the committee.

Adjournment.

## *Wednesday Morning, April 13, 1927*

*Topic: "Vocational Education"—Its Development and Place in the Public-School Program*

*J. C. Wright, Director, Federal Board for Vocational Education, Washington, D. C., Presiding*

The session was called to order at 9 o'clock by the chairman, who suggested the advisability of defining just what vocational education means. In the United States it is used to describe any instruction which has for its purpose the preparation of the individual for useful employment and is quite distinct from what is usually termed manual training or technical education. The term is more inclusive in other countries, but Doctor Wright pointed out that in his paper he was using the term with the restricted meaning that it has in the United States.

### *VOCATIONAL EDUCATION IN THE UNITED STATES*

*By J. C. Wright*

*Director, Federal Board for Vocational Education, Washington, D. C.*

Every great movement on the part of a social body represents a crystallized public opinion which has culminated in a demand by certain component parts of the social body for public service to satisfy some particular need. During the latter part of the nineteenth century and the early part of the twentieth century public opinion began to crystallize around the discovery of more modern and practical methods by which young people could be taught how to earn a living under modern working conditions. The old scheme of indentured apprenticeship which existed for centuries past had fallen down. Very few master workmen were in a position to instruct apprentices and, in fact, under modern working conditions apprentices began to be liabilities to employers rather than assets.

The days when fathers and mothers taught their children to follow in their footsteps as efficient workers on the farm and in the home were likewise rapidly disappearing. Even the adult farmer found

the advent of new farm machinery, the need for rejuvenating the depleted soils, and the need for adopting more modern business methods on the farm presenting to him problems of a mechanical and scientific nature which he was unprepared to solve. On the other hand organized education had become more and more formal and inflexible, with teachers generally regarded as theoretical and unfamiliar with the work of the world.

Two great outstanding needs for new educational objectives were apparent, the first of these being based upon an economic need and the other upon a demand for democracy in education. The first recognized that the national prosperity was at stake and the second recognized that individuals possess different tastes and different abilities, and that all are entitled to an equal opportunity to prepare for their life work.

*The economic aspect of vocational education.*—Two great assets of a nation which enter into the production of wealth, whether agricultural or industrial, are its natural resources and its human resources. The conservation and full utilization of both of these resources depend upon an adequate program of vocational education.

As a nation's natural resources decrease the value of human labor rises in importance. It has been said that a pound of steel in railroad rails may be worth 4 cents, but a pound of steel, refined and manufactured into watch springs by the addition of skilled labor and technical knowledge, is worth $4,000, or exactly one hundred thousand times as much.

American agriculture has prospered in the past because it rested upon the basis of the richest soil in the world, a fertility which has been treated as if it were inexhaustible. But experience has shown that corn, wheat, tobacco, and cotton, when produced as a crop continuously, year after year, will leave the soil barren of this fertility as the valleys of California were made barren of gold by the placer miner. While it may be impracticable to rejuvenate the gold fields, it is praticable to restore the fertility to the soil. In agriculture science has advanced far beyond practice, and it has become essential for the welfare of our increasing population that the farmer be educated in technical agriculture—for to the intelligent farmer the soil is an inexhaustible source of wealth—and the conservation and full utilization of these natural resources can be accomplished only in proportion as we train those who are to handle them.

The greatest treasure which any nation holds is its human resources. Like "acres of diamonds" the undeveloped skill and capacity for technical knowledge of the millions of workers everywhere represent a source of wealth which every nation should capitalize. The great army of school children, more than 2,000,000 of

whom are annually entering the public schools of the United States, should not only be given a basic general education but should be trained so as to develop their potential skill and give them the technical knowledge necessary to most intelligently render service in the shop, in the field, in the home, and in the office.

That the highly skilled trades are rapidly becoming old men's occupations, and are ceasing to attract young men as in former years, is shown by the percentage of mechanics above 45 years of age employed in various occupations:

| Occupations | Percentage above 45 | |
|---|---|---|
| | 1910 | 1920 |
| Carpenters | 38.9 | 44.9 |
| Brick and stone masons (including cement finishers) | 34.6 | 44.6 |
| Paper hangers | 24.6 | 41.4 |
| Painters and glaziers | 28.8 | 40.9 |
| Plasterers | 32.3 | 41.7 |
| Roofers and slaters | 23.6 | 32.1 |
| Plumbers | 12.5 | 21.7 |
| Structural-iron workers | 14.4 | 21.2 |
| Electricians | 7.5 | 11.2 |

While Arthur Pound, in his "Iron Man," maintains that the journeyman and artisan have given way to an army of machine workers, performing over and over one small process at one machine, turning out one small part of the finished article, and knowing nothing about the business beyond their narrow and limited task, the fact remains that the machine must be designed, it must be built, and it must be repaired by men who possess a high degree of skill and technical knowledge. The machine operator may correspond to that large group of workers which has always been present and which is known as "common labor," but the man who invents, designs, builds, and repairs the machine must possess a body of knowledge related to the work of a mechanic, and must be skilled in building this knowledge into the machine.

*Equality of education in a democracy.*—A study of survivals made by the Bureau of Education in 1918 shows that of every 1,000 children entering the first five elementary grades, 830 reach the sixth grade, 710 the seventh grade, and 634 the eighth grade. Of the original 1,000, 342 enter high school, 246 reach the second year, 181 the third year, 150 the fourth year, and 139 finally graduate from high school. This is 40.6 per cent of those enrolling in the first year of high school.

Of the original 1,000, only 72 enter colleges and universities, not including normal schools and teachers colleges, 52 reach the second year, 39 the third year, 30 the fourth year, and 23 finally graduate from college. This is 6.8 per cent of those entering high school and 32.2 per cent of those entering college. And yet the major objective of the elementary grades has been to meet entrance demands to high

school, and that of the high school to meet entrance demands to colleges and universities.

An educational system which provides the same course of study, the same subject matter, the same objectives, and the same school atmosphere for a group of 1,000 children, of which but 2.3 carry through to the end, is admittedly unfair to most of the other 997.7 pupils. It is evident that equality of opportunity in our present system of education is not afforded to the mass of our children. Where large groups find it necessary to leave school for economic reasons before they have completed the entire program, equality in the democracy demands that an opportunity be given for them to return to school during a part of the employed day or upon their leisure time. But whether from necessity or not the economic fact remains that the great mass of children go to work as soon as the laws of the various States permit.

The reason for this great decrease in school attendance may be a failure on the part of children and parents to appreciate the value of an education, or it may be because they do not see in the schools of to-day an opportunity for education and training which prepares them for the callings they wish to pursue.

The vocational program should give the youth not only a wide opportunity of choice in selecting a vocation but also an opportunity to prepare advantageously to enter into employment. It should give the adult an opportunity to upgrade himself in skill and technical information so that he may be able to work more efficiently for himself and his employer.

*Social aspects of vocational education.*—Some of the results of vocational education are realized through better standards of living. Vocational education has for its objectives not only increased production but improved methods of distribution and consumption of time and energy, as well as material products. Appreciation of the value of the earned increment, with due respect for the labor that produced it, comes best from actual experience in production. A father once said to a son to whom he was giving a sum of money: "Remember that hard labor produced every dollar, and spend it with due regard for the human effort that created it."

It is commonly said that general education enables the individual to learn how to live. It seems reasonable, however, that better standards of living can only result from an increased earning capacity and from a better understanding of economic values. A large function of home economics education on a vocational basis is to train in better habits of consumption, and to establish sane and wholesome standards of family living. Vocational education aims at both these objectives, and its aim may be summed up in the phrase: "Learning to earn and earning to live."

*Vocational education act of 1917.*—In 1914 President Woodrow Wilson, a college president and a classical scholar, approved an act of Congress authorizing the President to appoint a commission of nine members to consider the subject of national aid for vocational education and to report its findings and recommendations to Congress. The commission, as appointed by President Wilson, was representative in character. Its membership included two Senators, two Members of the House of Representatives, one man experienced in various forms of social work, one woman director of a large trade school for girls, one woman representing a prominent labor union, the secretary of the National Society for the Promotion of Industrial Education, and a special agent from the Bureau of Labor Statistics. Under the resolution creating it, the commission decided at the outset to address itself to the following questions:

1. To what extent is there a need for vocational education in the United States?
2. Is there a need for national grants stimulating the States to give vocational education?
3. What kinds or forms of vocational education should be stimulated by national grants?
4. How far can the Federal Government aid through expert knowledge vocational education in the various States?
5. To what extent should the Federal Government aid the States through national grants for vocational education?
6. Under what conditions should grants to the States for vocational education be made?

With an office and statistical staff of 45 persons engaged to assist it in its work, the commission sought, through questionnaires to State, city, and county superintendents of public instruction, and to national organizations of labor and representative employers, to obtain answers to the foregoing questions. Public hearings were likewise held at which all interested persons and representatives of national organizations interested in the subject were invited to appear.

The legislation recommended by this commission, as based upon its findings, was in debate before the Houses of Congress for two and a half years before being enacted into law.

*Provisions of the act.*—The act of Congress known as the vocational education act, approved by President Wilson, February 23, 1917, established the principle that the Nation as a whole has a share of the responsibility for the vocational education of persons who have entered upon or who are preparing to enter upon a trade or industrial pursuit, the work of the farm, or the work in the home, and for the preparation of teachers in these several fields. The act also established the principle that the direct responsibility for carrying on the work of vocational education rests squarely upon the shoulders of

the States and local communities. The act does not provide for a Federal organization which has direct or immediate administrative control, but it does provide substantial financial assistance to the States for the promotion of this new type of education. The sums appropriated by Congress are to be allotted to the States in the proportion which their population bears to the population of the United States.

Three different appropriations were made on a permanent and continuing basis:

1. An appropriation now amounting to $3,000,000 annually for the payment of the salaries of teachers, supervisors, and directors of agricultural subjects. This appropriation is allotted to the States in the proportion which their rural population bears to the total rural population of the United States.

2. An appropriation now amounting to $3,000,000 annually for the payment of salaries of teachers of trade, home economics, and industrial subjects. This appropriation is allotted to the States in the proportion which their urban population bears to the total urban population of the United States.

3. An appropriation now amounting to $1,000,000 for the preparation of teachers of trade and industrial subjects; teachers of home economics subjects; and teachers, supervisors, and directors of agricultural subjects. This appropriation is allotted to the States in the proportion which their total population bears to the total population of the United States.

The act also provides that the minimum sum to be allotted to any State for each of the three purposes shall be not less than $10,000 annually, and further, that each dollar of Federal money must be matched by a dollar of State or local money to be expended under the supervision and control of the State board for vocational education. The sums thus made available by the Federal Government may seem very small in comparison with the size of the problem. Experience, however, indicates that the States and local communities are prepared to furnish more than the matching dollar, since during the last fiscal year they expended $2.54 of their own money for every dollar of Federal money.

Under an act of Congress approved March 10, 1924, the benefits of this act were extended to the Territory of Hawaii, and an annual appropriation of $30,000 authorized.

*Federal and State administrative agencies.*—The act created the Federal Board for Vocational Education as a representative board. It consists of seven members, four of whom are ex officio members, and three of whom are appointed by the President of the United States. The ex officio members include the Secretary of Labor, the Secretary of Commerce, the Secretary of Agriculture, and the Com-

missioner of Education. One of the three citizens appointed by the President must be a representative of the manufacturing and commercial interests, one a representative of the agricultural interests, and one a representative of labor.

The act also provides that the State in accepting its benefits shall designate its State treasurer as custodian of Federal funds and designate or create a State administrative agency of not less than three members to perform the function of a State board for vocational education.

*How State allotments may be secured.*—In order to secure its allotment of Federal funds a State must accept the provisions of the act through legislative authority, and must prepare a plan showing the kinds of vocational education for which Federal funds shall be used, the kinds of schools and equipment, information as to courses of study, methods of instruction, qualifications of teachers, and plans for the training of teachers. This State plan when approved by the Federal board becomes the working agreement or plan of cooperation between the State and Federal boards, respectively.

It is the duty of the Federal board to examine these plans and approve them if believed to be feasible and found to be in conformity with the provisions and purposes of the act. After the State plan has been approved the Federal board must certify on or before the first day of January of each year, to the Secretary of the Treasury, each State which has accepted the provisions of the act and complied therewith, including the amounts which the State is entitled to receive.

*Studies and investigations.*—It is the duty of the Federal board to make, or cause to have made, studies, investigations, and reports, with particular reference to their use in aiding the States in the establishment of vocational schools and classes and in giving instructions in agriculture, trades, and industries, commerce and commercial pursuits, and home economics.

Such studies, investigations, and reports include: (1) Agriculture and agricultural processes and requirements upon agricultural workers; (2) trades, industries, and apprenticeships, trade and industrial requirements upon industrial workers, and classification of industrial processes and pursuits; (3) commerce and commercial pursuits and requirements upon commercial workers; (4) home management, domestic science, and the study of related facts and principles; and (5) problems of administration of vocational schools and of courses of study and instruction in vocational subjects.

Each State operates under a plan which has been prepared by the administrative staff of the State board and submitted to the Federal board for approval. Under this procedure each State plan takes into consideration the particular conditions and situations as they

exist in that particular State, so that, in general, each State is operating under a different plan, although all plans conform to the general requirements of the national act and the policies of the Federal board. These requirements include certain minimums as to age, as to hours per day given to shop work, and in agricultural education provision for supervised practice. While vocational education under these plans is limited entirely to education of less than college grade, the training of teachers of agriculture and home economic subjects is carried on, for the most part, in the colleges and universities.

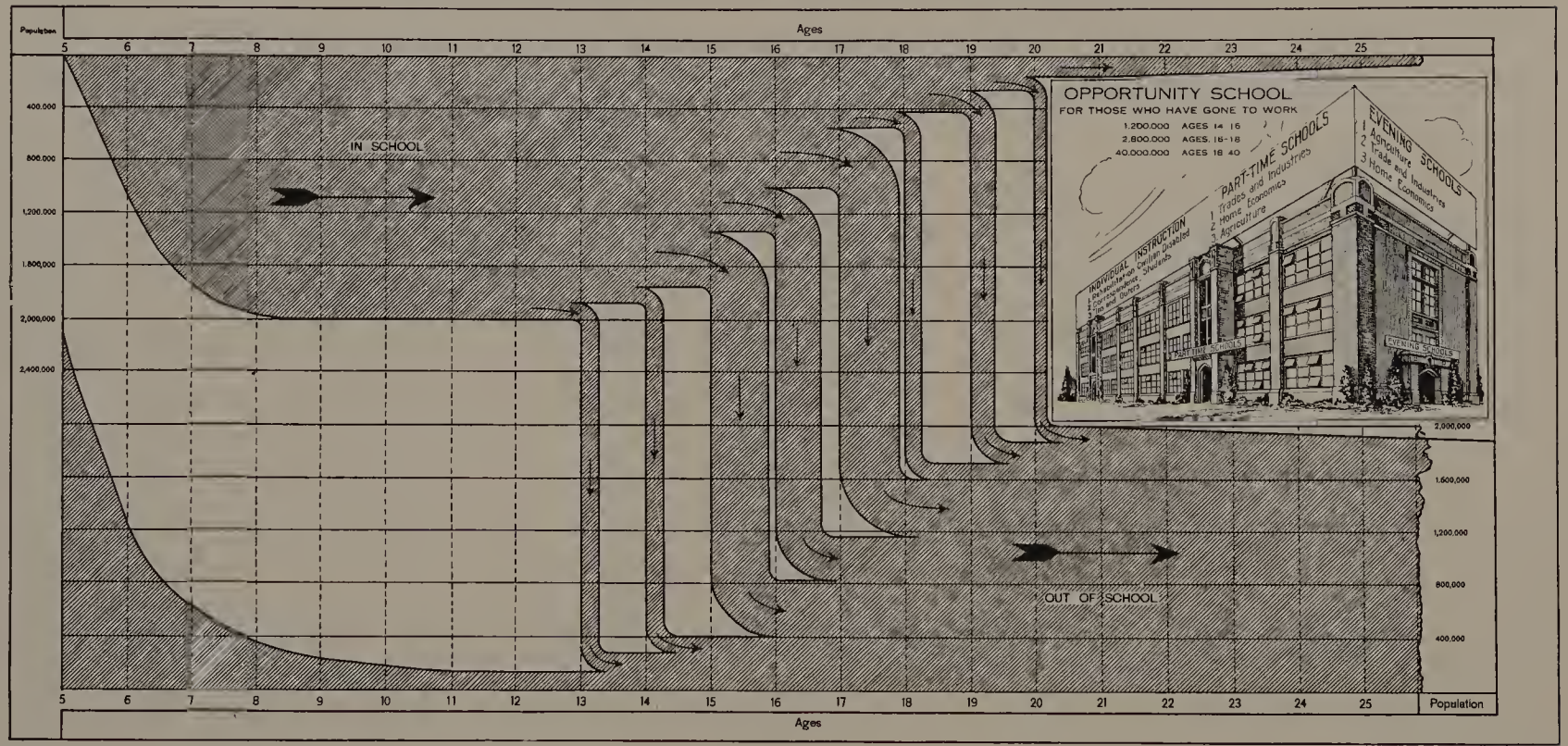
*Place of vocational education in the public-school program.*—The accompanying chart on "How can labor and education be the most satisfactorily combined"? shows the population in school and at work between the ages of 5 and 26. With 400,000 individuals to each of the horizontal spaces, it is evident that there are approximately 2,000,000 boys and girls in school for each of the ages 8 to 13, inclusive. The most pronounced departure from school to work begins at the age of 13, when 205,320 boys and girls leave the elementary schools. Upon reaching the age of 14 years, 110,646 join their brothers and sisters at work, and during the three suceeding years the number out of school is increased by 409,439, by 359,341, and by 229,721, respectively. Between the ages of 12 and 20 the school population for the respective years drops from 2,082,749 to 148,352. This latter number represents the 9 per cent still in school, while 91 per cent has gone to work.

A glance at the chart will show that one of the most important problems of the public-school administrator is that of rendering the maximum social service to the more than 91 per cent who go to work before they are 20, and to whom this service must be rendered, if at all, while they are yet in the advanced years of the elementary course and throughout the secondary period. The place of vocational education of secondary grade in the full-time school, in my opinion, begins with the fourteenth year and extends to or beyond the eighteenth year. On the chart it would represent the area including about 2,000,000 students who are within one or two years of the time when they are leaving school to go to work.

For various reasons the vocational school has followed the boy and girl to work and provides for the 4,000,000 in the group between 14 and 18 an opportunity to receive instruction supplemental to their daily employment in the part-time and evening schools. Beyond the age of 18 there are 40,000,00 men and women still under the age of 40 who are at work. Many of these are interested in extending their schooling along technical and mechanical lines related to their daily employment. Approximately 2,000,000 of these are enrolled to-day in correspondence schools, while approximately another ,000,000 are attending public evening schools.

# "HOW CAN LABOR AND EDUCATION BE THE MOST SATISFACTORILY COMBINED?"

"Educated people must labor. Otherwise, education itself would become a positive and intolerable evil. No country can sustain in idleness more than a small percentage of its numbers. The great majority must labor at something productive. From these premises the problem springs. How can labor and education be the most satisfactorily combined?"—Abraham Lincoln.




PREPARED BY J C WRIGHT,
DIRECTOR FEDERAL BOARD FOR VOCATIONAL EDUCATION

*Ten years of progress.*—More than 20,000 men and women are now employed as administrators, supervisors, teacher trainers, and teachers of vocational subjects in all of the 48 States and the Territory of Hawaii. Enrollment in vocational schools and classes, which were approved under the several State plans on June 30, 1918, amounted to 164,186 pupils in all types of vocational schools for which Federal funds were used. This enrollment included 15,453 in agricultural schools, 30,799 in home economics schools, with the remainder, 117,934, in trade and industrial schools. On June 30, 1926, reports from the 48 States and the Hawaiian Islands showed a total enrollment of 884,007, of which 110,909 were enrolled in vocational agricultural schools, 235,893 in vocational home economics schools, and 537,205 in trade and industrial schools. This latter number includes an enrollment of 298,842 in the general continuation school, which while not specifically vocational, is by the terms of the act incorporated in the trade and industrial portion of the program.

An analysis of this enrollment as to types of schools, vocational part-time, evening, and all day, shows that approximately 389,000 are enrolled in part-time schools, approximately 287,000 in evening schools, and the remainder of approximately 209,000 in the all-day schools. These figures indicate the degree to which the program as a whole lends itself to meeting the needs of those who are employed. An analysis of the enrollment in home economics education shows that more than 100,000 of the 235,893 enrolled are in evening schools, while the remainder are divided almost two to one between the all-day and part-time schools.

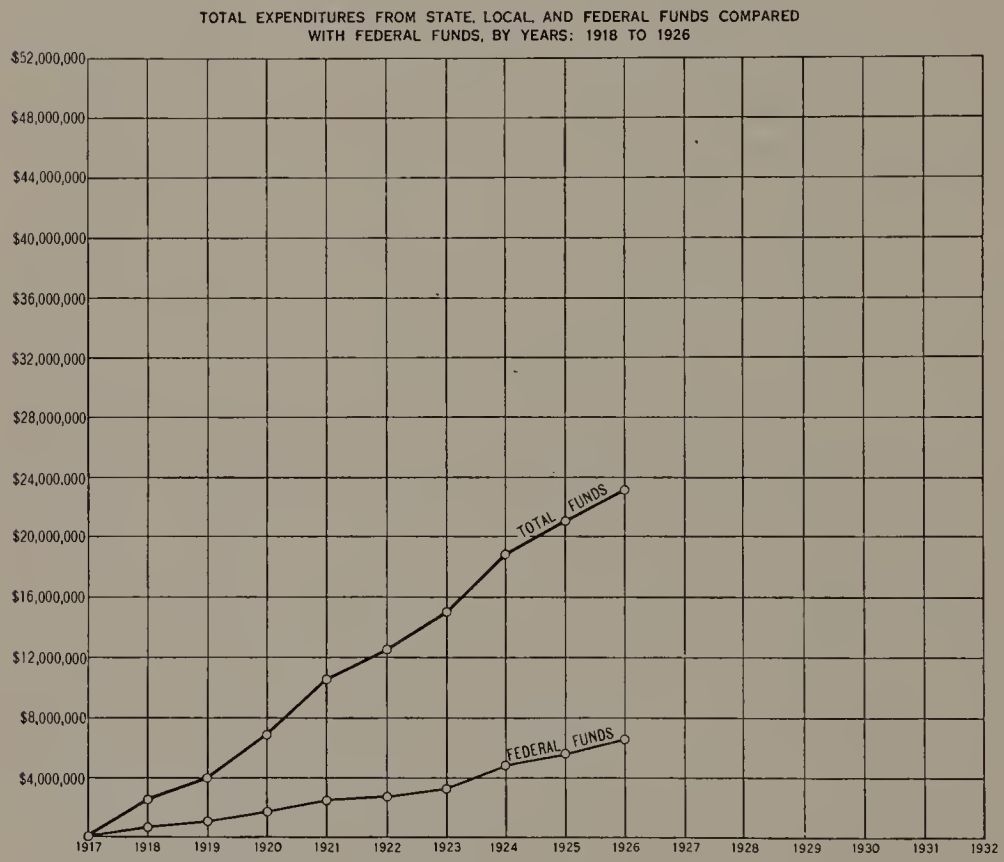
An interesting development in agricultural education has been the rapid increase in the evening school enrollment for adult farmers. Previous to 1921 but little thought had been given to the question of vocational education for those farmers not in school. During the intervening five years it has been found that even adults on the farm are willing to give their leisure time in order that they may attend school in the evening and be taught the science of farming.

An analysis of the agricultural enrollment for 1926 shows that almost 20,000 adult farmers were enrolled in the evening school. While the number enrolled in the part-time courses is small, this number will no doubt materially increase in the future.

If we eliminate the continuation school enrollment from that given for trade and industrial education, it is found that about 135,000 men and women are enrolled in the evening schools, with approximately 50,000 in the all-day and the same number in the part-time schools, which are either trade preparatory or trade extension in character.

It thus appears from these analyses that, except for the continuation school, the evening school is by far the greatest in point of numbers enrolled.

*Teacher training.*—The vocational education act specifically provides that teachers must be trained if Federal funds are to be used by the States for the salaries of teachers. In 1918 the enrollment in teacher-training classes amounted to 6,589. In 1926, this enrollment had reached 19,773. When we analyze this latter number, we find 11,598 men and 8,175 women preparing to be teachers of vocational subjects. When we analyze it as between the fields of activity,

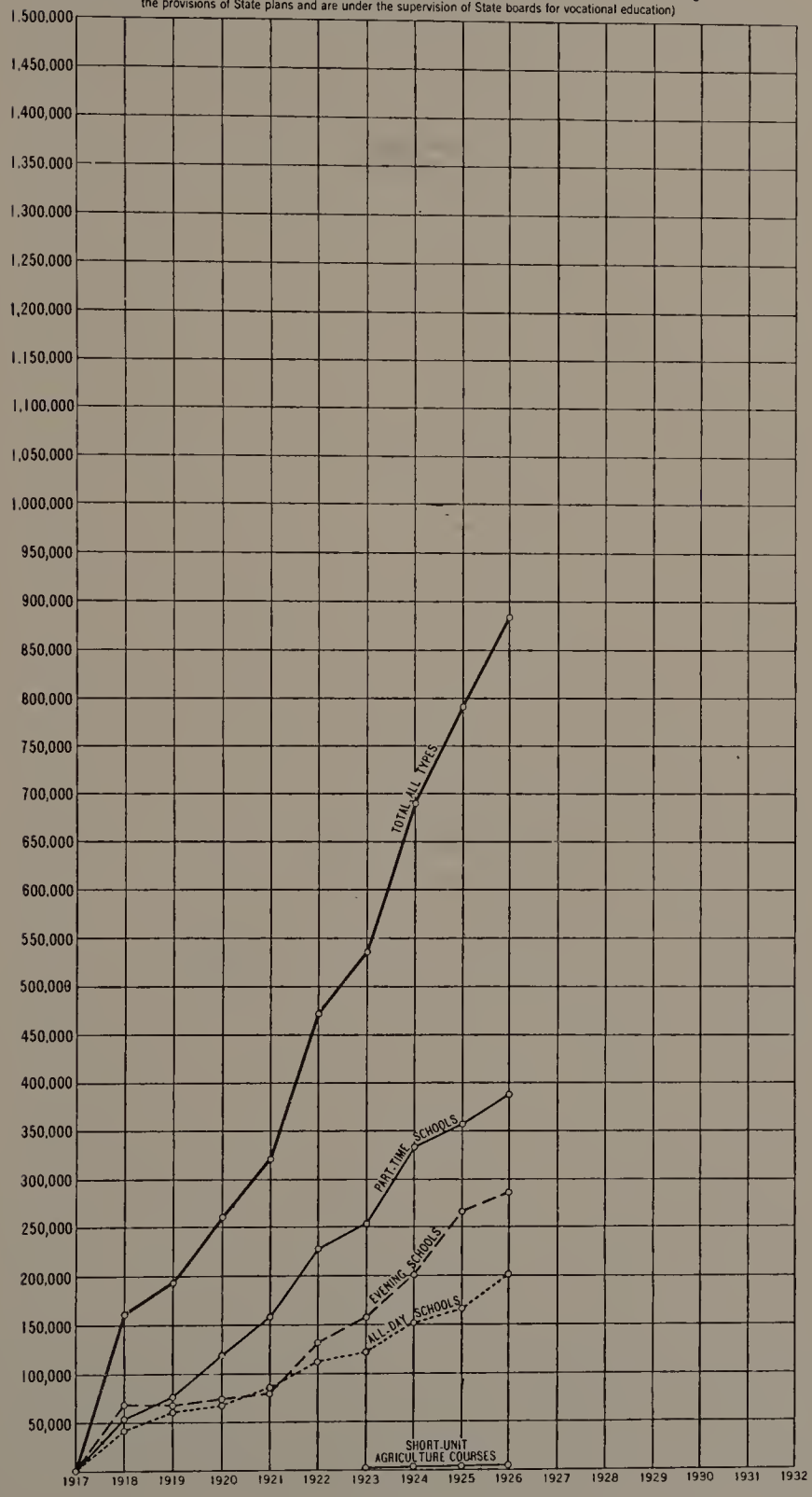



we find 3,929 in agricultural education, 9,651 in trade and industrial education, and 6,193 in home economics education.

*Expenditures of Federal, State, and local money.*—During the last fiscal year the total expenditures of Federal, State, and local money for vocational education by the States amounted to $23,179,641.44. Of this total, $6,548,567.92 was Federal; $6,148,942.95 was State money; while the remainder, representing the sum of $10,482,130.57, was contributed by the local communities. Under the terms of the vocational education act the Federal dollar must be matched by a dollar of State or local money, or both. It appears from the above figures that while the States have used slightly less of State money

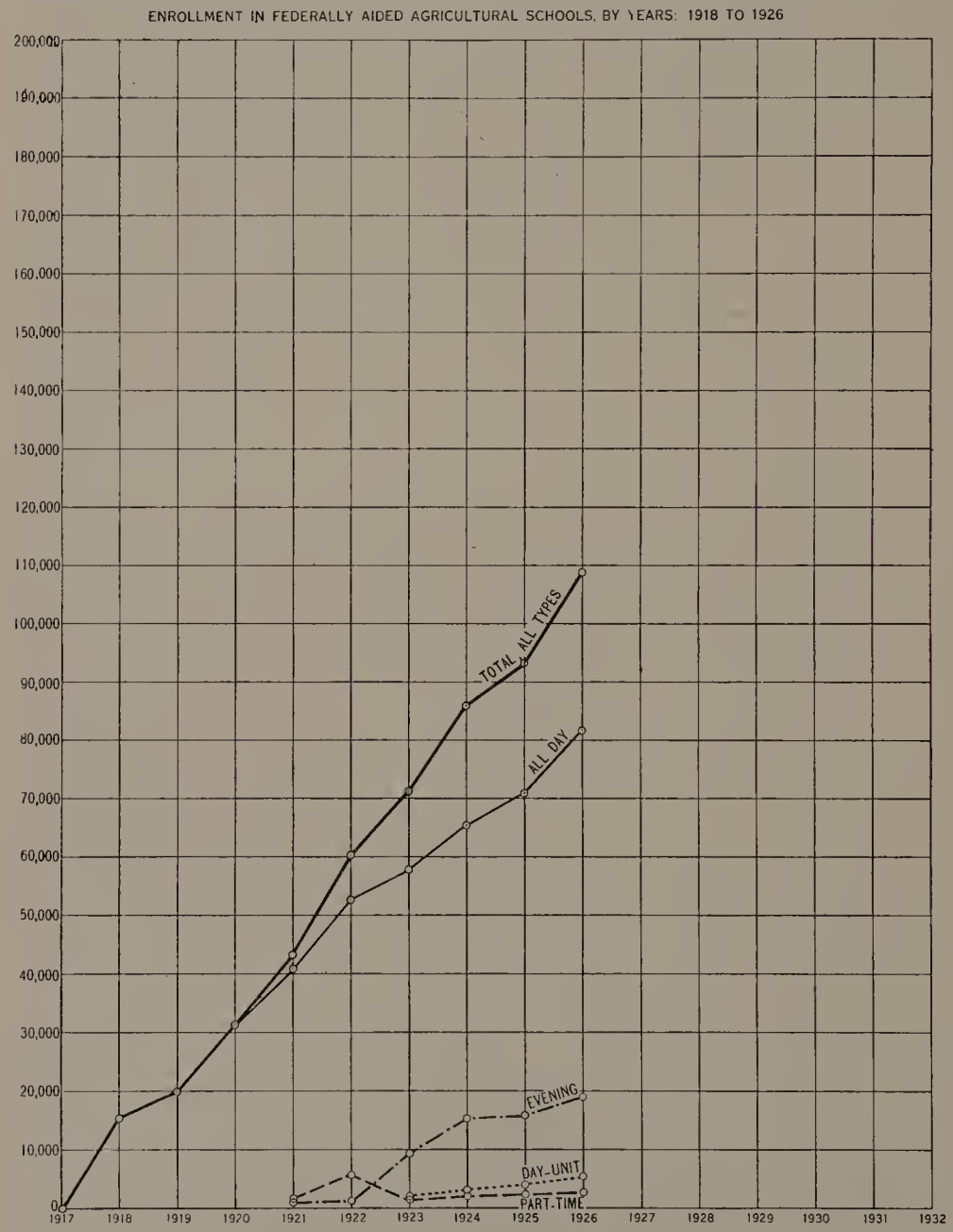
TOTAL ENROLLMENT IN PUBLIC VOCATIONAL SCHOOLS ORGANIZED UNDER THE PROVISIONS OF STATE PLANS AS APPROVED BY THE FEDERAL BOARD FOR VOCATIONAL EDUCATION

(Note.—These enrollments include schools Federally aided, together with those receiving State aid only, but which are organized under the provisions of State plans and are under the supervision of State boards for vocational education)



than they received of Federal money, the local community has contributed an amount sufficient to make $2.54 of State and local money for every dollar of Federal money received.

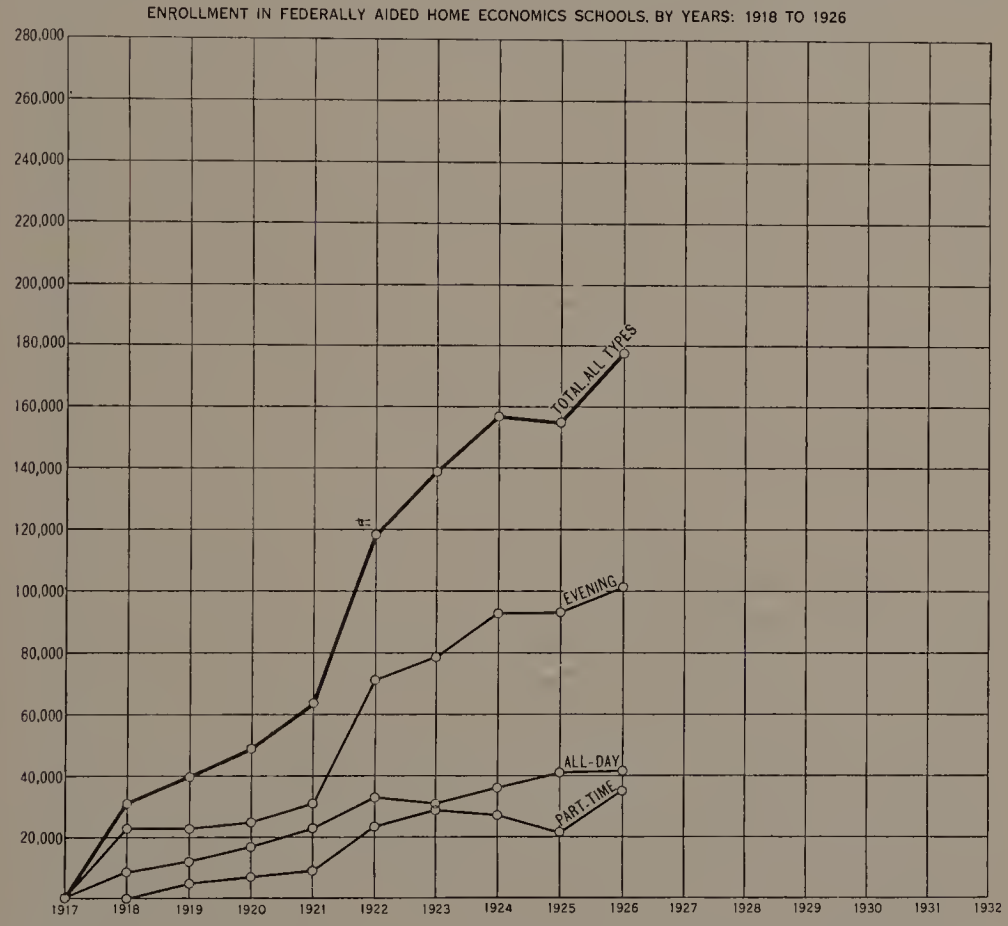
"*Receding goals.*"—I think it is President Hadley, of Yale, who is accredited with saying that "Education has a constantly receding




goal." As we review the developments in the vocational program during the period 1914 to 1926 we can easily appreciate the truth of this statement. While the enrollment in vocational schools from 1918 to 1926 has increased from 164,000 to 884,000, the problem of meeting the educational needs of the Nation, so far as they may be met by vocational education, is not by any means limited to an

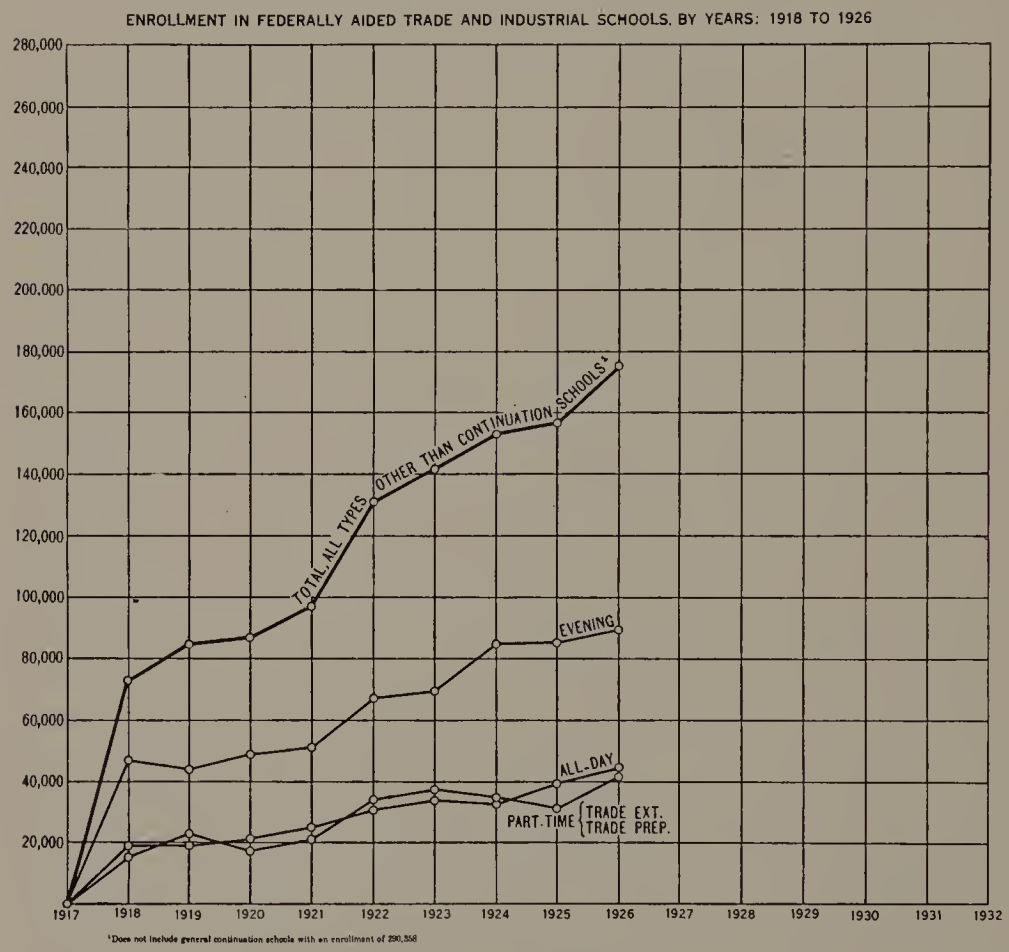
expansion in volume. We are constantly accepting new responsibilities and developing new objectives in new fields and an educational service for new groups of people.

The commission of 1914 touched lightly upon adult education. After the first year of its organization the Federal Board, in 1918, emphasized a change in the educational goal as set up by the President's commission, by directing special attention toward the need for giving greater consideration to adult education and to affording an opportunity for the employed youth to retain his job and attend




school on a part-time basis. More than half of the 48 States have enacted part-time compulsory attendance laws for the employed youth, while evening schools for adults are available during the winter months in almost every city. No one can possibly estimate with any degree of accuracy how many of these millions of adults are willing to give up their leisure time to attend school, or to what degree employers are willing to divide the working day or week as between school and work. It is safe to say, however, that the number that could safely be estimated as a probable enrollment at the end of the next decade will be much in excess of the number enrolled to-day.

In 1914 the old apprenticeship between the master and apprentice had broken down and was fast disappearing in all but a very few skilled occupations. This situation was known to the commission when it commented upon the absence of any system of education which would follow the youthful worker to his tasks, and by continued training show him a way to efficiency and happiness, but the commission was unable to visualize any organized device or procedure which could be included in the vocational program as a substitute for the master and his apprentice.




To-day, under a modernized procedure, and one which is fitted to the complications of the present-day social organization, we have a new apprenticeship system. The master workman is still on the job, but not with the responsibility of a teacher and his apprentice. Groups of apprentices are brought into the public schools on a part-time basis, and under the instruction of an occupationally competent master workman are given in four to eight hours per week an opportunity to learn the technical content of their trade.

In 1914 the commission and the public in general conceived of teacher training as the job of an institution, as one that could be

accomplished entirely within the walls of a college or university, and one that could be completed in advance of employment. To-day we have a changed conception and a receding goal. We are more and more recognizing the necessity of securing a teacher who is (1) occupationally competent, (2) equipped with the technique of teaching, and (3) possessed of the necessary amount of general education and those personal characteristics desirable and necessary for the particular teaching position. This change in conception has brought about the employment of occupationally competent workers, many of whom must receive their training as teachers after employment on the job. The problem as conceived to-day is not only one of preparation for teaching, but one of improvement in service—an everreceding goal.

The President's commission gave little or no thought to the qualifications of teacher trainers, even though it provided a special fund for the training of teachers. With the development of the program throughout the ensuing years we have come to realize that the training of teachers in vocational education likewise requires the services of a specialist, and that in order for this part of the program to be efficient careful attention should be given to the particular qualifications to be possessed by those responsible for this portion of the program. In a recent ruling adopted by the Federal board provision was made for securing certain minimum qualifications in order to meet this new goal in vocational education.

In 1914 the commission visualized the need for supervision in the field of agricultural education only. The Federal board, after one year of operation, made possible the use of Federal teacher-training funds for State supervision in the three fields—agriculture, trades and industries, and home economics. It is safe to say that this action on the part of the Federal board has had more to do with the present-day accomplishments and improvement of the program than any other single act on its part. To-day every State has one or more supervisors in each of the fields on a full-time or a part-time basis, giving his or her time to the improvment of the State's program.

In 1914 the commission failed entirely to see anywhere in this picture that vast army of 600,000 or 700,000 disabled men, women, and children, who, through accident or disease, had suffered a vocational handicap of some sort. This objective or goal was not visualized until 1918, when, as a result of the World War, attention was directed toward this need by the program for rehabilitating the disabled soldier, sailor, and marine. It was not until 1920, however, that Congress included the vocational rehabilitation of the disabled civilian in the Nation's program of vocational education, and to-day 40 States are engaged in rendering this service to their citizens. It is estimated that approximately 112,000 men, women, and children, who

are vocationally handicapped, not as a result of the war, are added each year to our army of disabled. The vocational rehabilitation of 112,000 annually might then be set up as a goal in this particular service. To-day we are actually rehabilitating about 6,000 annually.

This, then, is a picture of the vocational education program in the United States as it was conceived 12 years ago, and as it has developed during the past decade. I can leave with you a no more fitting statement of the goal in vocational education than that expressed by William Penn, the founder of the Commonwealth of Pennsylvania, and a friend of human freedom, when, more than 250 years ago, he enunciated the fundamental principle—"That all children within the Province * * * shall be taught some useful trade or skill, to the end none may be idle, but the poor may work to live, and the rich, if they become poor, may not want."

## *VOCATIONAL EDUCATION IN MEXICO*

*By Jose Arturo Pichardo*

*Chief of the Department of Primary and Normal Instruction, Secretariat of Education of Mexico*

In this brief statement regarding vocational education in Mexico, I shall mainly deal with the endeavors of President Calles's régime in uplifting the spiritual and material life of the great mass of inhabitants, of those who have for centuries dwelt in dark illiteracy and absolute neglect from the other social classes and the autocratic governments of former days.

Mexico is a country of many races, many climates, and many opinions. Besides the pure Indians, there are the Mestizos, with varying proportion of Indian blood, the whites, and the near whites. Of Mexico's 15,000,000 inhabitants, 4,000,000 are pure Indians, 8,000,000 are Mestizos, with a strong proportion of Indian blood, and the rest are whites or near whites.

Mexico is a land of great geographical variations. We have torrid heat in the south and on the coasts; deserts in the north; temperate climate in the central plateau; perennial snows on the mountain peaks, and untrodden tropical jungles in the valleys.

Despite our 15,000 miles of railroads, Mexico is a land of great distances and poor communications. It is easier and quicker to go to New York or to San Francisco from Mexico City than to other places through the country. Great distances and slow communications make it very difficult to mobilize public opinion, and even if newspapers could travel quickly and there were enough of them, six out of every ten people could not read them, because they do not know how to read.

The creation of public opinion on any matter whatsoever is a slow process with us. With you, mainly in the United States, news travels and opinions are transmitted. With us, in Mexico, rumors ferment and opinions explode.

The diversity of race groups; the inferiority complex of the Indian face to face with the European; the isolation of the people, isolation both material and spiritual, all of these factors work for the creation of a strong individualism for the atomizing of group consciousness, and are, in a word, forces that hinder any process of national integration.

The picture which I have sketched for you, a picture of a nationality in dissociation, is true to life. Let no person think, however, that it is a picture of the whole of Mexican life. There is another aspect to Mexico. It is the Mexico stubborn in its nationality, proud and persisting; the Mexico that fought 11 years for independence. It is the Mexico that for 17 years of social revolution, 17 long and trying years, has been attempting to build a new nation.

There are, then, the two sides of the picture: A Mexico heterogeneous, unassociated; and a unified Mexico, with a strong personal profile.

Taking the first side of the picture, it seems that a great part of the people of Mexico are backward. From a certain angle this is true, but this backwardness can be explained in the sense that those social groups have been abandoned and kept separated from the rest of the population and civilization rather than due to inferior ethnical traits.

From the period of the Spanish conquest nearly up to the present time, thousands of villages and settlements in the heart of the mountains and in the depth of the valleys were always left on the margin of national educational programs. Without the educational benefits which should have been the logical and elemental means of improving economic ability and helping social integration, millions and millions of Mexicans had to remain as negative units in the life of the nation and were but unfortunate tools in the hands of native and foreign oppressors. With 12 or more hours per day of hard labor, they were able to earn only a few cents in wages, which merely permitted them to die from gradual starvation.

To the administrations of President Obregon and President Calles belong the honor of having undertaken the real task of the redemption of the rural masses of Mexico, through an elemental but wise system of general and vocational education.

From your viewpoint, our rural school can hardly be taken to be a vocational one, since you wait for the child to show his vocation and furnish him thereafter with the proper schooling, while due to

our national urgent need for workingmen and farmers we have to take advantage of the few years we can retain the child in the school to give him an intensive education, both vocational and general.

President Obregon left at the end of his term nearly a thousand rural schools, and General Calles, in less than three years of governing, has succeeded in establishing 3,068, there being at this time more than 4,000 rural schools supported by the Federal Government. To this number we may add approximately 1,500 maintained by the State governments, so that we have at least 5,500 educational centers in these small settlements in places where never before a school-teacher had been seen. By means of these centers we are endeavoring to attain, as a final aim, a point where the peasant may not only learn to read and write, but acquire information in practical agricultural and industrial fields, developing the natural resources of every region. Our objective is that children, while receiving instruction, may be enabled at the same time to increase their economic ability to succeed in life and to be in a position to cooperate in the future life of the country, so that these millions of human beings may sometime become productive units, real factors in the material and moral welfare of our country.

Now, to give you an insight into the spirit of our work, let me present to your minds the picture of a typical rural school—of one of those 4,000 rural schools that the Mexican Federal Government is establishing all over the country.

Here is the school: One teacher, about 50 children, their ages running from 7 to 14 years. The building consists of only one room, perhaps, with a wide porch in front; plenty of ground around the school; a school garden. Oh, I do not want to mislead you with these terms. As you may see in the book that we had the honor to hand you, our rural schools are far from resembling yours. Ours are quite primitive, more informal, naive. There is a more informal atmosphere about this little school. Work is individual although there are plenty of group activities. The children read and write wonderfully well and they all sing—how they love to sing! Spanish is the language used. Perhaps the children speak it brokenly, just as I speak English, and maybe if the parents came they would only address them in the native dialect but the official language is Spanish and the children love it and the parents are delighted to see them learn it. These children read and write and do some number work; they draw and paint; the girls sew and embroider—all these things we are accustomed to see school children do. But in this school the pupils keep chickens, rabbits, pigeons, and sometimes they have a pig or two. Their flower garden is a spot of beauty—the children have worked so hard on it. The children have their orchard; they keep bees; they have planted the mulberry tree

and are starting a silkworm colony. They are so busy and so happy, these children in the rural schools.

You get the idea back of this information that we are not interested in traditional questions of method and of technique but we are tremendously interested in having a vital school and in having a school that will contribute toward social organization and national unity. A far cry indeed from the narrow, restricted life of the traditional school to this natural real community of children and teacher, where to raise a chicken or a crop is as important as to learn a poem.

The rural teacher leads a busy life. Teaching the "three R's" would be child's play compared with what this instructor has to do in this little rural school of ours. The teacher is supposed to work six hours daily, four during the day with the children and two in the evening with adults. But minding the children and their elder brothers in school is not all of it. The teacher opens the little rural library, connected with the school, and answers for the people. She vaccinates them and gives whatever medical advice she can.

I have presented you a true picture of our socialized schools, those schools where conditions are natural, the work personally interesting, the activites real, and where there is a spirit of give and take, of sharing, and a community of interest.

The rural school forms a very important part of our program of vocational education, but of course it is not the only one. Besides the rural school we have in Mexico City and in many of the towns and large cities technical, industrial, or vocational schools of the usual type.

In length and intensity of studies our system is much like your own, fundamentally and in its details. For that reason I will not mention them.

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## *VOCATIONAL EDUCATION IN JAPAN*

*By Seiiti Hirota*

*Director of the Kobe Technical College, Kobe, Japan*

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The subject of vocational education in Japan is somewhat new. Japan has been no exception to the tendency in all ages and countries to regard vocational education as of secondary importance to liberal education. Our system of education had, therefore, been formulated in accordance with this old notion, and thus vocational education was neglected in the past, even by the authorities responsible for it. Those schools coming under this category were somewhat discriminated against, consciously or unconsciously. For example, the graduates from vocational schools were not admitted to the higher schools, which were practically the only channels by which they might

enter the universities. (Before I go on, I wish to call your attention to certain terms which I shall frequently use in the course of my address. When I use the term "middle school," I mean the approximate equivalent of the American high school; when I use the term "higher school," I mean the approximate equivalent of the American college.) To go back to examples of discrimination—the textbooks used by the secondary agriculture, technical, and commercial schools were not officially inspected, whereas they had to pass Government inspection in the case of boys' middle schools and girls' high (secondary) schools. Facilities for training teachers for the latter class of schools were provided, while there were hardly any such provisions made for the benefit of the former; that is, for the vocational schools.

Also, the general public preferred to let their sons and daughters receive a liberal education by sending them first to middle schools (high schools), because they believed that a liberal education was the only kind of education respectable and worthwhile, and that vocational education was but a side issue and hence of minor importance and negligible. Such a viewpoint had tenaciously taken possession of people's minds, but now this traditional conception, or shall I call it "misconception," is steadily being effaced. The nation is fully alive to the fact that vocational education is the medium by which the younger generation can qualify themselves as useful members of society and that it is instrumental in giving independent economic life to individuals by enabling them to take up various forms of occupation. In this light, the educational authorities of Japan are now exercising their best efforts for the cause of vocational education.

I now propose to give you a brief summary of vocational education in my country. For convenience sake, I divide it into three main branches, namely technical, agricultural, and commercial.

Let me begin with technical education. The progress achieved in this line of education has been quite phenomenal in recent years, both in system and substance. Japan has at present 20 higher technical schools established by the Government, and one private. The course of study is three years in all of them except one, in which it is four years. Of the 20 Government higher technical schools, 16 have a department of mechanical engineering, 11 a department of chemistry and electrical engineering, 6 a department of civil engineering, 5 a department of architecture and dyeing, and 4 of spinning. In addition, such subjects as marine engines, electrical chemistry, brewing, ceramics, fiber industry, textile industry, shipbuilding, mining, metallurgy, decoration, metal industry, wood cabinet working, and printing are taught in some of these schools.

The statistics published at the end of 1925 showed that the total number of students enrolled in the aforementioned governmental

higher technical schools was 6,872; of these 1,635 were in the mechanical engineering departments, 1,140 in electrical engineering, 979 in applied chemistry, and 609 in civil engineering. The number of applications for entrance received by these schools was 7,921, while those admitted by passing the examinations were 2,461. The number of graduates was 1,494, while there were 1,806 calls for employment. Further details are: Against 359 graduates from the mechanical engineering departments, the demand was for 480; against 243 graduates of electrical engineering, the demand was for 371; against 72 graduates from the architectural departments, the demand was for 135; against 155 graduates of civil engineering, the demand was for 193. I regret to say that, on the whole, the students in the higher technical schools have hitherto been taught in such a way as to qualify them to prepare plans and designs and to engage in the theoretical side of their profession rather than to mix with mechanics and workmen in order to guide the latter and set them examples. They have lacked the practical training necessary for this. This has been a great drawback in this particular line of education and certainly is one of the main reasons for industrial inefficiency in Japan.

According to the latest statistics available, the secondary technical schools throughout Japan numbered 102 with an enrollment of 22,248 students. The number of the candidates for entrance was 19,667, of which number 8,100 were admitted. The total number of graduates for the year in question was 3,677. Some of these schools are employing with much advantage a method which in the United States is called "cooperative education." This method is chiefly utilized by the private technical school at Miike mine, established by Mitsui & Co.

In past years, industry in Japan was imitative rather than creative. The historic position of Japan had compelled her to seek guidance from western countries. She is now determined, however, to repay what she owes to the industrial world at large, and thus to do her part in the promotion of the welfare of humanity.

Next let me say a few words in regard to agricultural education. There are 13 Government and public institutions where higher education pretaining to agriculture is being given. The principal subjects taught there are agricultural science, agricultural chemistry, forestry, veterinary science, sericulture, agricultural civil engineering, agricultural administration and economy, livestock raising, etc. Three thousand three hundred and thirty-four students are studying in these schools. To give elementary but practical education in agricultural subjects we have not less than 324 agricultural schools. They have been established in all prefectures throughout Japan to insure a wider distribution of agricultural knowledge. Agriculture in Japan is conducted on a small scale, and it is based on simple and rather

primitive methods, long in vogue in the country. But, in order to attain efficiency, a proper system of management and organization has to be introduced by bringing in the aid of machines, electrical power, and other modern inventions available in this field.

We now come to the third of the main branches of vocational education, namely, commercial education. Japan has 12 higher commercial schools under the direct control of the Government and in addition 1 public municipal, and 3 private. Besides these, there is one such school attached to the Tokyo Commercial University. The secondary commercial schools number 208. In recent years candidates for these schools, both higher and secondary, have increased in number. The system pursued in this branch of vocational education has failed to produce active and practical men who can prove themselves useful when sent out into the modern business world. Yet trade and commerce are demanding such young men as have graduated from higher commercial schools and the demand for them is fairly large, although the business depression now being experienced in Japan is affecting that demand. In the near future Japan will convert two of the above-mentioned higher schools into commercial universities, one under Government control and one under the control of the Osaka municipality. At any rate this branch of education is one of the most popular, and all possible improvements are being carefully introduced.

Before I conclude let me say a few words about vocational continuation education, from which my country is deriving much benefit. The purpose of this education is to give certain necessary knowledge and ability to juniors who have finished the elementary schools, but who are compelled to work for their daily living in various occupations. It also aims to make them desirable citizens of the community. In almost every city, town, and village both day and night schools, chiefly the latter, have been established for boys and young men who seek to complete or add to their elementary education along the line of their respective callings. The number of such students amounts to about a million and a half. The number of teachers is 71,514, of whom 9,034 are full-time men.

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## *VOCATIONAL EDUCATION IN SAMOA*

*By K. Su'a*

*Of the Department of Education of Samoa*

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Mr. Chairman, ladies and gentlemen, the present spirit prevailing in this great educational conference is a true testimony to me of its importance. I feel assured that our coming here together will tend

to cement more firmly the ties of international friendship and cooperation.

The future of humanity, the destiny of nations, and the direction of human progress are in the hands not so much of the makers of laws or the captains of industry as of educators, who are shaping the citizenry of the world.

The problems of education in Samoa have been made plain in my last two reports. Our present condition is totally due to lack of sufficient funds and of more experienced teachers.

The Governor of American Samoa is assisted by three Samoan district governors, one for each political division, and they are assisted by the county and village chiefs.

The secretary of native affairs is a civilian, who also serves as judge of the high court.

Socially, and to some extent politically, Samoa may be said to still be in the patriarchal stage of civilization. The social system is communistic. The head of the family is elected by the members of the hereditary eligibles. Therefore, the chief of the family is regarded as father by the entire family group. The number in a family is unlimited. The blood father and mother do not play the same rôles in a Samoan family as they do in yours. The word "aiga," which means family, has a wide significance in Samoa.

Each person in a family, especially the head, contributes the products of his labor willingly to the support of the family. Food is easily produced and is usually plentiful. Very little work other than planting is required. A stranger is cordially received and given food and sleeping accommodations free of charge, or any thought of charge, in a Samoan home.

Vocational education may be said to be in its infancy in Samoa. There is a big field for improvement. Copra is the only export, and other foods are not raised commercially. We have not been fortunate enough to have any scientist stay long enough in Samoa to inform us of the right way to cultivate our land.

Although I have already stated in one of our sessions that there are no illiterates in Samoa, I wish to say that we have not yet arrived at perfection. When it is remembered that ignorance is the most fruitful source of poverty, vice, and crime, it is easy to realize the necessity of removing what is now the menace not only for our social welfare but for the general good of humanity.

The people of Samoa have awakened to the fact that they are now coming in contact with the world, and they feel their need of education.

Our school law is compulsory. Hygiene is taught in all the schools and medical treatments are given free to every child. The Fealofani Club, established by the prominent women of American Samoa, is

very much interested in the child's welfare. Samoans are trained to do medical work and many girls are receiving training as nurses in the Samoan Hospital. The population of American Samoa, since the raising of the American flag 27 years ago, has increased 52.8 per cent.

In conclusion, permit me to say that this conference is a great inspiration to me. I shall go back to Samoa with a new vision. I feel confident that the Samoans will be delighted to learn from your experiences. Your aims for international friendship and cooperation will appeal to them, for they are steeped in the missionary spirit.

I will close in the usual Samoa way by saying—"Ia mannia le Fono! Soifua!" which means, "Success to the conference! Long may you live!"

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## *VOCATIONAL EDUCATION IN HAWAII*

*By James A. Coxen*

*Director of Vocational Education, Territory of Hawaii*

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A definite program of vocational education in Hawaii was started less than two years ago. Before that time there had been considerable work of a practical nature given in the public schools, but such work was offered for its general training value and not as a definite attempt to train young people to earn a living. It had, however, all been conducted under the name of vocational education and this incorrect use of the term had resulted in much confusion. We are still trying to establish the meaning for vocational education which is generally accepted on the mainland: "Any form of education which is planned to give definite training for a specific occupation."

I do not know that we have made any great progress in organizing our program but we can already see some beneficial results and we feel very hopeful for the future. We believe that vocational education is greatly needed in Hawaii, and feel confident that the public schools can be of great assistance in providing it. It is not my purpose to tell you of the results which we have secured, but rather to state some of our problems and suggest the ways in which we are attempting to solve them. These problems are not entirely peculiar to Hawaii, and I have no doubt but that many of you people have met and solved similar ones and your experience will be very helpful to us.

The first big problem that we had to consider was, "What kinds of vocational education are needed in Hawaii?" We were concerned principally with work of less than college or university grade, for the field of higher education was being well cared for. It seemed to us that the number of people employed in the various vocational fields would serve as an index as to the probable need for training. We

found that 35 per cent of the persons in Hawaii over 14 years of age were engaged in the agricultural occupations; 29 per cent were engaged in home making; and 17 per cent in manufacturing, transportation, and the mechanical trades. In these three groups were employed more than four-fifths of the adult workers of the Territory, and for these occupations few attempts had been made to provide definite vocational training. For that reason we have confined our training plans almost entirely to these three groups of occupations.

After determining the occupations for which vocational education was to be offered, we faced our next problem, "What kinds of training are needed by the various occupations?" It is easy to say that training is required by vocational workers but it is not so easy to state just what kind of training is needed by the workers in a specific occupation. A person may realize that a trade worker needs instruction in mathematics but he can not readily tell just what parts of mathematics are required, and how they should be applied. If vocational education means training for a specific occupation, then the training must be specific and must be organized to meet the needs of that occupation. This means that the occupations must be analyzed and the educational needs of its workers determined. In this work of analysis the schools alone can do very little without the help of the people who have a practical working knowledge of the occupation.

Since the largest group of workers in Hawaii was the agricultural group, most of our attention has been given to agricultural education. Agriculture here is, in most cases, a highly specialized occupation and the conditions which exist are very similar to those found in a large industrial plant. Except for the general agriculture practiced in the few homestead projects, the agriculture of any section is confined almost entirely to the production of one of three products—sugar, pineapples, or coffee. A general course in agriculture would then be of little value in the way of definite vocational preparation. Our supervisor of agricultural education is a man with plantation experience who is fully acquainted with the work done by plantation workers. One of his first steps was to analyze the work of growing sugar cane. After listing out all of the kinds of work done by plantation employees it was then possible to pick out the things which the schools might teach. He soon found that there was a need for instruction in arithmetic, but that the terms used and the problems solved were quite different from those formed in the ordinary school textbook. As a result he compiled a textbook on agricultural arithmetic which contains only the mathematics and the terms used by plantation workers. We have followed a similar plan in the industrial field as well as in that of homemaking. We firmly believe that we can provide effective training for vocational workers only if we

know what their specific needs are. We can not see that satisfactory results can be secured by giving general training designed to train young people for a variety of work for there is no need for the worker who has been so trained.

After determining the fields in which training can be offered and then deciding the kinds of training which should be provided, a third problem confronted us: "Of the kinds of training needed, which can the schools provide?" It is probable that some training is needed for practically every inexperienced worker. In many cases the amount of training needed is very limited and can best be secured only by experience on the job. For some occupations the chief requirement is the acquisition of skill, and for these it is probable that the schools can do comparatively little. We shall never be able to supply in the public schools all of the kinds of equipment used in the various vocations of the Territory, and this should hardly be necessary, since training in the use of such equipment can readily be given in the occupations. In many lines of work, however, the best worker needs not only skill but also information and judgment which the schools can help him to secure. If a worker can be adequately trained "on the job," there is little need for the schools to try to assume the burden, for it means an additional expense and usually unsatisfactory results. It is only when the schools can give all or a part of the needed training in a more satisfactory way that any kind of a vocational course should be organized. It is quite probable that the best type of worker will be secured when the schools and the industries cooperate, each providing the kind of training which it can best give. This means that vocational education will not be confined to pupils enrolled in the ordinary public schools but will be extended to meet the educational needs of all workers who are in need of training. The aim of vocational education is better trained workers, and it is justified only when they are being produced.

The problems that I have mentioned are largely those of organization, and they are by no means peculiar to Hawaii. We have one other, however, which is of even greater concern, and I am inclined to think that it is more serious with us than with some other school systems. It is this: "How can we induce workers to take the training offered?" Vocational education can not be forced on people who do not want it. There is no need to provide vocational training to people who have no inclination to follow the occupation for which training is offered. Everywhere we hear the statement that the schools are training young people for "white collar" jobs, and to some extent this is true. Just so long, however, as young people insist on training of that type the schools must continue to offer it. It is only as we can get the young people to realize that their opportunity for successful employment depends almost entirely on the need for

workers that we can hope to train them for occupations which do not now attract them. In Hawaii we have a great mixture of races and nationalities, and all receive exactly the same in the way of educational opportunities. Many of our children come from homes where the parents are uneducated and have had to work hard all of their lives. They have a fervent desire to see their children have an easier time than they have had, and it is not surprising that they are somewhat unwilling to have them enter the occupations which they have followed. They have a kind of blind faith in education and believe that a high school or college education will in some way provide a means of escape from hard work. This is particularly true in regard to the boys, and we are making an earnest effort to show the folly of such ideas. More than three-fourths of the male workers of the Territory are employed at some form of manual labor, and this condition will continue to exist for many years. It follows, then, that our young men must, if they remain here and work at all, labor at the occupations for which workers are needed. It is not kindness or even justice to train a boy for a position which does not exist or which he can not secure. We think that it is much better to train him to do well the kind of work which he will be called upon to do than to provide training which he will probably not be able to use. Our last and our greatest problem, then, is that of educating our people to the idea that training for the common occupations is needed and will produce results. With this problem solved, the other problems of organization and teaching will be comparatively simple.

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Mr. Coxen, during the reading of his paper, made the following extemporaneous remarks:

"In one or two places we are attempting a scheme which is comparatively new. In certain sugar-producing sections we have enrolled classes of boys over 14 years of age who intend to continue plantation work. The class is given certain land to be cultivated by the boys under the same terms as regular contract workers and according to plantation standards. In one place we have 11 boys working 32 acres. They must do all the work necessary to cultivate the cane. The nature of their school classes is determined by the needs of the plantations. Sometimes they work four days a week, sometimes five, and have no time in school, and other weeks they have nearly all their time free for class work. The course of instruction is very elastic, the same teacher handling the boys in the field as well as in the classroom, where instruction embraces work in various academic subjects, such as history, civics, and hygiene, as well as plantation work. Boys with such experience and training will have better chances for promotion when they actually go to work. We are here attempting to show them that there are opportunities on

plantations and that the trained worker has a better opportunity to succeed.

"The schools and plantations are able to cooperate because the schools can not provide land for cultivation of sugar cane, etc., and neither can the plantation provide the usual type of instruction given in school."

## *EDUCATION AMONG ADULTS*

*By Leon J. Richardson*

*Director of University Extension, University of California*

People used to limit education to the period of youth. Thereafter, since it was deemed to be too late to learn or to be taught, studies were put away along with other childish things. No wonder mental activity dwindled; experience had little import; and thinking, unsupported by new growth in the mind, yielded small fruit. As a matter of fact, we never outgrow the need of education. A well-ordered state therefore provides educational facilities for its citizens in each period of their lives, even old age.

The ability to learn can be maintained as long as one *uses* the mind's acquisitive and rational powers. Moreover, while one continues to learn, development goes on. Under such conditions intellectual growth, freed from haphazard forces, may be fostered throughout a long span of life. Normal minds well used become more and more effective. Goethe detected the mark of genius, not in natural endowment, but in a sustained capacity to take pains.

A man's intellectual life, being self-directed and informal, presents a striking contrast to the directed and formal character of his youthful training. Curricula, regulations, and the like determine largely what a schoolboy shall study, the sequence of subjects, and the rate of his progress. He not only learns assigned lessons but is daily taken in hand and taught. Even as a high-school or college student, if his course extends thus far, he must do much work in designated fields, in order to become familiar with common branches, to gain mental discipline, to lay solid foundations, and be prepared for advanced study in chosen fields. These prescriptions, made for the good of the majority, may not all fit his aptitude or interest. Meanwhile, he works under supervision, encounters standards, undergoes examinations, strives for a diploma or degree, and, in general, gets on by showing conformity. Sooner or later he must be equipped to earn a living. His attention is then directed to a vocation and his work proceeds as in a groove. Becoming thus a specialist, he has small opportunity to develop his powers symmetrically. Things he might like to learn or to do, he must often forego in order to gain efficiency in his bread-and-butter calling. Since he lives in an age of keen com-

petition, nothing short of intensive training will serve his vocational needs. Good as our schools are, they can hardly teach throngs of pupils without resorting to the methods of mass instruction and to extreme standardization. Under such conditions a youth rarely grows up with roundly developed mental powers, individuality, and personality. In any event, at the beginning of mature life every man lacks much. Fortunately, however, he may live and learn. Ahead lie years that may bring further development and opportunity.

A few favored persons, seemingly without thinking about their education as such, lead wholesome and fruitful lives, just as some maintain health with never a thought about regimen. Their days show a happy balance of mental and physical activities. They proceed intuitively and spontaneously toward their goals. Others have an analytic and reflective bent. An individual of this kind is likely to perceive some of his deficiencies and set about the business of removing them. He may perhaps become aware of persons cast in the intuitive mold—of their power, freedom, joys, imagination, and creativity—and try to uncover the secrets there hid. Sometimes a man is quickened intellectually by a sense of his responsibilities; dependents stir him to make the most of himself. He observes persons who may offer him suggestion or inspiration. Some, if not known to him personally, are among his contemporaries; others are found, perhaps after long search, in biography, history, poetry, or works of fiction. Whatever their age or station, the influence of these personalities helps the individual along his way. In some such fashion, for the modes of approach are many, a man enters upon the path of adult education.

Life at its best shows unbroken mental growth, a condition often found in persons to whom we ascribe the qualities of greatness. And to continue to grow seems in final analysis to depend largely upon the will to keep on striving. Says Lindeman:

> For ends which can be achieved—which are conceived in terms of static qualities leave the self without further incentives to growth. If there is at once a tragic and heroic side to life, it lies in this: There are no realizable ultimate goals which can be reached without depriving us—in the very act of consummation—of their meaning.[1]

For men and woman who carry foward their education there are neither entrance nor exit examinations nor degrees. Fancy how Socrates would have greeted a petition from his students to be granted degrees—flowery statements, inscribed on imitation sheepskin, to the effect that their education was "completed." A few of his searching questions would soon have set them right. Education, properly regarded, is at first preparation for life and later a continuing aid to life.

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[1] E. C. Lindeman's book on the Meaning of Adult Education is full of sound ideas and deserves wide circulation. His matter and argument reappear on some of these pages.

For the student in mature life there are neither curricula nor required subjects. Subjects, to be sure, are studied—indeed often long and thoroughly—but they are not selected by an extraneous authority and imposed on the student; rather are they chosen by the learner himself as his interest or need may prompt. The mastery of a subject is worth while only as it contributes to his well-being.

Adult education aims at what the Greeks called the good life. It includes a wide range of activities, both mental and physical, by which men and women endeavor to make the most of themselves. Efforts are directed toward many objects, one of which may be described as meeting situations. Everyone "finds himself in situations with respect to his work, his recreation, his family, his community—situations which call for adjustments." Situations arise whenever one's aims and wishes are thwarted by obstacles, especially the obstacle of insufficient ability. Since these situations arise indefinitely and in many cases can be solved by some kind of training, the need of education is coterminous with life. Thus, education among men and women often begins in an effort to overcome a particular difficulty. Some form of study may solve the problem. One successful effort leads to another, and so growth goes on. Adult education may or may not involve some form of organized instruction, but it can not dispense with the lessons of experience and human contacts, nor with observation and reflection, discussion and conference, study and reading.

The learning process is complex and as yet inadequately understood; one thing however is certain: For a grown man it is not to be severed from experience. By experience he is guided; by it he tests results. Too often people rest content with the experience and knowledge of others. According to the findings of psychology, "we learn what we do, and therefore all genuine education will keep doing and thinking together. Life becomes rational, meaningful, as we learn to be intelligent about the things we do and the things that happen to us." As Emerson said, "instincts presently teach that the problem of essence must take precedence of all others—the questions of Whence? What? and Whither?—and the solution of these must be in a life, and not in a book."

The mature student aims to increase his use of intelligence, his ability to understand, to comprehend facts or ideas. Of little use is the conventional lecturer who metes out information and authorities, expecting acquiescence and conformity. What a man needs is rather something that will call forth his critical powers, give practice in solving problems, and utilize his experience and knowledge. Let no one cajole us into false notions about progress. The gifts of life come, not to him who merely waits, but rather to him who works hard and long. Says Spinoza:

The greatest good is the knowledge of the union which the mind has with the whole of nature. * * * The more the mind knows, the better it understands its forces and the order of nature; the more it understands its forces or strength, the better it will be able to direct itself and lay down the rules for itself; and the more it understands the order of nature, the more easily it will be able to liberate itself from useless things.

Knowledge and human power, according to Francis Bacon, are one. "Our knowledge *of* will lead to control *over* the objects of our environment." Man's scientific achievements have resulted in greatly increased power over nature. There are, of course, limits to the exercise of this power, since man is himself a part of nature and can not escape the limitations of his position; but his "power over nature, such as it is, has been achieved by intellectual processes."

University extension, it may be remarked in this connection, is not something devised to meet novel or rare conditions, but is rather a response to intellectual demands among mature members of society, who can be, and in fact often have been, helped by scholars.

A man bears his part in his family, does his daily work in a group, and performs his civic duties in a community, but has his being in himself. Hence arises the natural impulse to develop his individuality and personality. "In the modern world of specialism only a small sector of personality is set into motion through vocational activities. We all tend to become specialists—which means that we all tend to become fractional personalities. This involves not merely a loss to ourselves—a shrinking of our personalities—but a loss to the world, since we can not have broad and generous societies composed of narrow and limited citizens."

If a vocation disturbs the true balance of man's nature, his aim should be to restore that balance, to revive or to develop the sensibilities and interests of an unwarped personality. Such an aim, having little to do with worldly success, involves continued education. "To be ourselves we must complete ourselves."

Everyone desires to express himself, to assert in some manner, however modestly, his personality and individuality. This prompting toward self-expression is deep-seated in our natures, like the instinct for self-preservation. We "become weary of being counted; we want to count for something." Adult education, rightly pursued, gives one "the art of transmuting * * * experience into influence * *. Many persons attain this level of zestful living by virtue of native gifts; others need to fortify themselves" through some form of stimulation or training. Men and women of well-developed personalities—

will inevitably feel the urge to participate in public affairs; they will wish for some share in creating the environment which furnishes the stimulating background for their lives. Mere feeling of difference may lead to idiosyncrasy; differences

which do not get themselves realized in action may readily become negative regrets and frustrations.

The desire for freedom is universal. However, when striving to achieve it, men have often followed blind paths. Many have thought that to come by it was to become free from things that seemed to obstruct their ways. Rousseau pictures the free man as liberated from the constraints of civilization; and John Stuart Mills's solution of the problem was to be free from the dictates of public opinion. The fact is we are parts of a natural order, we are members of society, bound by family ties, and in a thousand other ways linked with the world and the civilization of our time. Freedom, then, is not a state of release or escape but a harmonious living with or within our environment.

We become free by finding out "what we desire freedom for and what stands in the way of our desire." Psychotherapy has shown that the obstacles are usually within us, not without, being largely self-constructed, self-induced. We live in a society whose complete aim, as H. Morris says, is "self-government, not only for communities but in the life of the individual." Accordingly we should develop our natural powers, recognizing at the same time both the extent and the limits of our capacities. We should use our whole personalities, modifying our ways to suit new circumstances and conditions. Freedom, then, depending largely upon intelligence, can be realized in no small measure through education.

*Know thyself*, for this injunction is no less valid to-day than it was in the time of Socrates. And to know thyself—a member or part—is bound up with knowing somewhat of the whole—mankind and the universe. Withal, cease not to grow; for "learning," as Lindeman says, quoting Aeschylus, "is ever in the freshness of its youth, even for the old."

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*Discussion*

Mr. Smith. The impression that has been borne in upon my mind is that we ought to have uniformity of nomenclature in educational terms in all countries.

Now, the term "opportunity school" is used in New South Wales to designate the school for backward or retarded children who are not mentally deficient, but who with some special assistance will catch up with their regular work and continue in the regular schools. The meaning of "opportunity school" in America differs from this. We should agree that any given term should mean exactly the same in all countries.

We have one type of school which we call "prevocational." After finishing the primary school, students may go either to high school, which is purely cultural, or to prevocational schools.

The junior technical school provides a three-year course, beyond the primary studies. The first year in this school they have three days a week of cultural education and two days of practical work, such as the sciences, but with a decidedly manual bias. The second year they take two days of cultural work and three days of technical subjects. Then the third year there are four days of technical studies and one of cultural.

After the prevocational school a place is found for the student in the technical college, which gives instruction only to people who are actually engaged in some skilled trade.

We have always been able to find apprenticeships for boys when they finish the course at junior technical schools. After becoming apprenticed, boys spend six hours a week in a technical college, getting instruction in subjects which will help them to understand the principles which underlie the practice of their trade.

When the question of arranging syllabuses of work for students at technical college was under discussion, a committee of three members of trades-unions, three members of employers' unions, and three educators was appointed to evolve a course of instruction for such a school which would function in the daily life of the boy. We thus have schools and colleges which satisfy our needs, but which might not suit others.

The instruction which is received in the technical colleges is the only instruction called "vocational education." In junior technical schools the course is called "prevocational."

Mr. LIGOT. I shall preface what I have to say regarding vocational education in the Philippine Islands with a few words on the status of the schools, in general, during the American occupation.

Just after the close of the Spanish-American War, when peace was secured through mutual agreement between representatives of the United States Government and the Filipino leaders, the first altruistic enterprise undertaken by the United States authorities was the reopening of public schools, wherein educational opportunities were given to the people without regard to age. At that time there were no native English-speaking teachers available. Consequently, American military officers were largely drawn upon for instructors, principals, and division superintendents; they were very busy in instructing children in the morning, and ambitious men in the afternoon and evening. At first, many parents were reluctant to send their children to school because of the ill treatment and cruel punishments which the pupils had received from teachers during the Spanish régime, but when they began to realize the benevolent efforts of the Americans, which were exemplified not only in the kind treatment of pupils, but in the distribution of free textbooks and supplies, they

were eager to have their children educated. Thousands of children began to pour into the schools. Owing to the great influx of pupils it became necessary to utilize as teachers natives who had acquired some knowledge of the English language.

At the present time, there are about 7,000 educational institutions throughout the islands—schools, colleges, and universities. To be more explicit, according to the census of 1918, there were 6,510 educational establishments, of which 4,785 are public schools and 360 nonsectarian private schools; the remaining 1,365 are classified as sectarian or religious schools. There has been an astonishing increase of schools in the Philippine Islands, since 1903. According to the foregoing census there were only 1,633 public schools in the islands, while there were 4,785 according to the census of 1918. This means that the schools maintained almost entirely out of the public funds have nearly quadrupled in the course of 15 years. On the other hand, the number of nonsectarian private schools has decreased 64.1 per cent. This is due especially to the promulgation of Act No. 2706, making it obligatory for the Secretary of Public Instruction to inspect and recognize private schools and colleges. Private institutions which have been unable to attain the standard required, in order to give official validity to the certificates and diplomas issued by them have been eliminated; thus, there remain, at present only a very few private schools which are not yet recognized. The increase in the number of sectarian or religious schools during the lapse of time above referred to is also noticeable, 1,365 being enumerated when the 1918 census was taken, as against 325 for the 1903 census. This is due to the fact that the parish priests of the Catholic Church have made it a point to establish their own parochial schools.

Of the 6,510 schools, 6,402 have day classes, 39 are night schools, and the remaining 69 have both day and night classes. Most of the night classes are found in Manila, for the reason that there the biggest nucleus of laborers and employees is to be found, for whose benefit these night schools are held. I give herewith a recapitulation of school statistics:

| | Census of— | | | Census of— | |
|---|---|---|---|---|---|
| | 1903 | 1918 | | 1903 | 1918 |
| Total number of schools | 2,962 | 6,510 | High schools | 102 | 87 |
| Public | 1,633 | 4,785 | Public | 40 | 48 |
| Private | 1,004 | 360 | Private | 52 | 14 |
| Religious or sectarian | 325 | 1,365 | Religious or sectarian | 10 | 25 |
| Primary and intermediate schools | 2,858 | 6,228 | Colleges and universities | 2 | 15 |
| Public | 1,593 | 4,599 | Vocational | | 178 |
| Private | 951 | 313 | Universities | | 2 |
| Religious or sectarian | 314 | 1,316 | | | |

Another illustration of the steady growth of public education in the Philippine Islands is the following:

*Comparative table on public schools*

| | 1918 | 1920 | | 1918 | 1920 |
|---|---|---|---|---|---|
| Number of public school | 4,785 | 6,886 | Total enrollment | 676,283 | 935,678 |
| Primary | 4,165 | 6,084 | Number of teachers | 14,330 | 21,017 |
| Intermediate | 434 | 737 | American | 501 | 316 |
| Secondary | 48 | 65 | Filipino | 17,172 | 20,701 |

The public schools at present fulfill their true functions. They relate themselves to the social needs of the time and place in which they are established. Directors of education, division superintendents, supervisors, principals, and teachers have been carefully studying Philippine conditions. They established such courses of study and schools as would prove effective in meeting the needs of the people. It is safe to say that the actual educational system represents an investment of the lives of Americans and of the lives and wealth of the Filipino, for the general progress of the Philippine Islands.

As to vocational education in the Philippines I may say that the children, beginning from the primary and intermediate schools, have been given various handicrafts, such as embroidery, plain sewing, lace making, basketry, gardening, and woodworking. Since the various handicraft courses are especially adapted to the locality, and since there is differentiation of work for boys and girls, these courses are particularly adapted to the local and social as well as individual needs. Before 1908 these handicrafts were not obligatory as they were not definitely included as part of the required work for all pupils. Outlines for industrial instruction as bases of vocational education were then prepared and bulletins and other publications were issued to assist the teachers in putting the requirements into effect. During annual vacations, assemblies in Manila and other places were organized into normal institutes where most of the time was spent in giving additional training in the teaching of industrial arts. At the present time the industrial courses are as follows: Embroidery, bobbin lace, cooking and housekeeping, sewing, fillet lace, crocheting, hat making, basketry, slipper making, loom weaving, woodwork, elementary hand weaving, mat making, bamboo and rattan furniture, brush and broom making, gardening, farming, and trade.

To further the industrial courses and to meet the demand for vocational education, the insular government has constantly provided for six insular schools, namely, the Philippine Normal School, the Philippine School of Arts and Trades, the Philippine School of Commerce, the Philippine Nautical School, the School of Deaf and Blind, and the Central Luzon Agricultural School, which offer special courses

of instruction. These courses have been enriched and enlarged in an effort not only to meet the demand for more highly trained teachers but also for technically trained men in the various fields of human endeavor. The number of graduates in the last 10 years especially from the Philippine Normal School was so great that not all of them could be accommodated in the public schools. There was a time when the Chinese Empire needed some school-teachers from the Philippines and some of them went for vocational reasons as well as for adventures.

Now, what about those who can not complete their vocational education? A great many of them accommodate themselves in the factories and in other employments in the government or in the business and commercial houses, and they mostly attend high schools and colleges to continue their education. Of those who have seen the advantages of education but have had no means of continuing it, many find their way to the United States to write and to study. One of the great problems which the Bureau of Education is facing to-day is the difficulty experienced in inducing students to engage in agricultural pursuits, cultivating the soil and making it more productive by utilizing the methods of modern scientific agriculture. I am afraid that we are educating too many men and women along academic and professional lines. But agriculture, horticulture, pisciculture, and other branches of human knowledge for food production are somewhat disliked and neglected by the students.

Mr. Lee. To the Chinese educators vocational education is of great importance. A national association of vocational education, with headquarters at Peking, was organized in the summer of 1917 to promote such education among the masses. In spite of the political chaos, educational work along this line was carried on just the same.

Before the organization of this national association, vocational schools had been established. In 1916 there were as many as 531 vocational schools throughout China. Since then the movement has made tremendous strides, and up to 1922 the number of vocational schools throughout the country had increased to 1,353.

The most important vocational work in China is that pertaining to agriculture. The maritime customs reports show that 73 per cent of China's exports are agricultural, hence the importance of study along that line.

Vocational education holds an important place in the Chinese system of education. According to the system, boys and girls from 6 to 12 years of age go to the primary schools to receive their elementary education. From 12 to 15 they attend the junior middle school. From 15 to 18 they may either go to the senior middle school or the normal school or the vocational school. Vocational schools are regarded as important as the normal schools. From 18 to 24, children

may go to the technical schools or colleges or universities for their higher education.

There are vocational schools of commerce. Two very important commercial ports of the world are located in China—Shanghai and Hong Kong. They want men and women trained in commercial education. China is becoming industrialized, especially in the port cities. Students better trained along modern technical lines are needed. Hence the vocational schools in many seaports devote themselves to the training of men who will be able to handle machinery and work along technical lines.

The Association of Commercial Continuation Education of Shanghai takes care of those who have not been trained under the new system of commercial education but have only served apprenticeship according to the old method.

The mass education movement publishes a magazine called "The Farmer," for the benefit of the Chinese farmers; and another periodical called "The New Citizen," for the benefit of common citizens, with the purpose of arousing their interest in taking up vocational education.

Experimental schools are conducted in different parts of China to determine just what types of vocational schools are of greatest benefit to the different geographical sections and to the rural and urban peoples.

The National Vocational Education Association holds national conferences every two or three years for a period of from five to seven days. A majority of the Provinces is represented. It is interesting to see that educators from various parts of the country can meet to discuss problems of education and plan for the future in spite of the unsettled political conditions.

In China to-day there are about 4,000,000 people who have received an elementary education through the mass education movement. There are 6,819,486 students in the elementary schools, secondary schools, colleges, and normal schools. Adding all these figures together there are about 10,819,000 students attending schools of all kinds. Twenty-five years ago about one in four hundred could read and write. Since 1922 an average of 1 in 43 is able to read and write. This is important because it may be given as one of the causes of the rise of nationalism in China.

Mr. KENNEDY. Following the primary schools we have technical schools for trades, agricultural schools, and domestic science schools for girls. Students are furnished scholarships by the Government and passed on through these schools.

One difficulty in New Zealand is that students do not know what they want to do nor do their parents have any particular desire in the matter.

To me a great need seems to be the cultivation of the imagination of students along industrial and professional lines. Instruction in the history and poetry of the different trades and professions could be given the students that would enable them to make their choice of occupations easier. I believe as my old tutor, Dr. L. P. Jacks, says:

> Strictly speaking nothing can ever matter quite so greatly to an industrial civilization as the character of its work. All hinges at this point. The characters of men and women (as we conceive them) are essentially identified with the work they do. This it is which, when all other influences have been allowed for, makes them what they are. To say that a man makes his work means nothing till we see that his work also makes him. Does he wish to improve himself? Let him improve his work, and one morning he shall wake up to find himself a better man.

Mr. Dizon. There is no doubt that one of the greatest blessings that the United States gave to the Philippine Islands was her system of public education. But the public schools in the Philippines are not an unalloyed blessing, for we find that there is a tendency on the part of those educated in them to leave the farm. At present thousands of boys and girls are restless in their home towns and are desirous of going to Manila or perhaps to the United States, either to continue their education or to find clerical positions. The public-school system of the Philippines is failing to interest the boys and girls in vocational training; it is failing to eradicate their inherent contempt for manual labor. This contempt for manual labor has been inherited from the Spaniards who taught the Filipinos, by example, if not by precept, that such labor is only for those who are ignorant. This is the reason also why Filipinos do not engage largely in business. They got the idea from their former masters that buying and selling is good enough for the "heathen" Chinese but not so for the "Christian" Filipinos. So the professions appealed to the bright and well-to-do Filipinos and many of them shone in law, medicine, and theology.

As long as the Philippine independence issue is not solved it is hard to induce many young men to fall in love with vocational training and with those professions which are the greatest need of the country. In selecting their future careers immature persons do not consider the great need of the country, but are molded by the popular desires of the people. At present, the most popular persons in the Philippines are the political leaders, who are the heroes and idols of the Filipino youths. They see them on the platform; they hear them in the legislative assemblies; they read their speeches when they plead for the political emancipation of their mother country, and as a result they, too, desire to become like them. Consequently every year the Philippines produce about 500 lawyers to 2 or 3 engineers and few agriculturists.

For the sake of the economic development of the Philippines the independence issue must be settled at once. When this is done the people can turn their attention and energies to the internal development of the country. The young men who are bright would not be attracted to the legal profession so much as they are at present and many of them would turn their eyes upon those professions that will make them capable exploiters of the natural resources of their mother country.

Mr. BOND. For nine years the State of Mississippi has cooperated with the Federal Government in the program of vocational training. Our most popular high school now is the school for vocational training. The greatest criticism of the schools in the United States is the random way in which the courses of study seem to go. There is too much work not headed in any direction, too many students "at sea" when they finish high school and college. Vocational education gives direction to the school work and it dignifies manual labor—tending to do away with the old idea of going to school merely to get out of work. This type of education trains our young people to work with their hands and to have respect for all forms of manual labor. It pays its way in dollars and cents.

Eighty-five per cent of the people in Mississippi live in the country, therefore, most of our training is in vocational agriculture. One of the requirements of the agricultural schools is that each school must have 10 acres of land and a house for a teacher, who is employed for 12 months a year. Each school must show a profit on the work done by that school. Some schools have had as much as 100 per cent net profit.

We like this system, because it gives a chance to have part-time schools. In this way boys and girls who must work for a living can obtain some schooling, which otherwise they would not get. We teach them to serve their employers better, and we also give instruction in religion and attempt to instill in them the love of home.

Vocational education is the most popular type of education in Mississippi.

Adjournment.

## *Wednesday Afternoon, April 13, 1927*

*Topic: "Vocational Rehabilitation of the Disabled Civilian"*

*Salvador Novo, of Mexico, Presiding.*

The session was called to order at 2 o'clock by the chairman.

## *VOCATIONAL REHABILITATION OF PHYSICALLY DISABLED: PROMOTION BY THE UNITED STATES GOVERNMENT*

*By J. C. Wright*

*Director Federal Board for Vocational Education*

By the civilian vocational rehabilitation act of June 2, 1920, Congress set up a program of cooperation with the States, under which persons disabled in industry or otherwise to the extent of being vocationally handicapped should be vocationally rehabilitated and returned to remunerative employment.

This legislation established as a public policy the principle which had been urged upon Congress for several years, namely, that the Nation as a whole should share with the States the common responsibility for vocationally rehabilitating disabled civilians whose disabilities involve vocational handicaps which might be partially or completely overcome. At the same time, the principle was established that the direct responsibility for carrying on this work rests upon the States. Therefore, the Federal Government did not undertake the organization and immediate direction of rehabilitation service in the States, but agreed rather to make financial contributions to its support, to encourage the work within the States, and give advice and assistance in all matters of organization and administration.

Since the highest responsibility of the Federal Government is the welfare of its citizens, no argument is needed to establish the responsibility of the Federal Government in vocational rehabilitation, and Congress has recognized this responsibility by the passage of legislation. By the act of 1920 vocational rehabilitation is recognized as an important and vital part of our national program of conservation, and along with other forms of conservation it has become a part of our national effort to attain the highest degree of efficiency as a nation.

Cooperation of the Federal Government with the States, as provided in this act, is based upon four fundamental ideas: (1) That

since rehabilitation of the disabled is essential to the natural welfare, it is a function of the Government to encourage the States to undertake it; (2) that for the same reason, the Federal Government should assist in bearing the financial burden of the program; (3) that since the Federal Government is vitally interested in the success of the program it should participate in the work; and (4) that the best way of developing proper standards of efficiency is through the establishment of a partnership with the States.

Every year thousands of persons are disabled by accident, injury, disease, or congenital condition. Many of them are automatically absorbed in life's activities and become adjusted to the work of the industrial world. On the other hand, many persons who become vocationally handicapped can not of their own initiative again become adjusted to the workaday world; like many of their able-bodied brothers they are not self-dependent, they need others to help them on in life. If all persons were in a position to acquire an education on their own resources or on their own responsibility there would be no need for education under public auspices or for a public vocational rehabilitation service.

Forty States have accepted the benefits of the Federal act to which reference has been made. In setting up their services of vocational rehabilitation they must meet the provision of the Federal act that administration be by the State board for vocational education. A technical staff is organized for the purpose of carrying on the work and to deal directly with the disabled persons in need of service. Special schools are not provided; rather, all existing institutions for training, both public and private, are used in the readjustment of the disabled.

*Procedure in rehabilitation.*—When a disabled person is reported to the State rehabilitation department, he is notified of the character and purpose of the service to which he is eligible, and upon receipt of certain information, the department arranges an interview for the purpose of taking an inventory, so to speak, of the person's physical, mental, and economic assets. Every opportunity and agency is used to secure information, furnishing suggestions as to a plan of rehabilitation, which plan is finally formulated in cooperation with the disabled man himself. The plan may involve merely placement in a suitable job, but it often provides for preparation for a job, either through formal training in a public or private school, or in a commercial or industrial establishment while the person is employed.

The fact that a workman has suffered a physical handicap is no reason, in most cases, why he should join the ranks of the unemployed. There are few physical disabilities that can not be overcome. Men and women who have suffered injuries resulting in the

loss of an arm, a leg, a certain muscular function, or even eyesight have, through proper attention and training, recovered their former earning capacity and possibilities of promotion. For instance, a man who lost a leg through injury in a boiler shop has become a successful dental mechanic. Before his injury he was earning a good wage as a lay-out man, but was incapacitated for the job. He had always been interested in dental mechanics. As this kind of work could be done by a man wearing an artificial limb, he was given a course of training by the rehabilitation service in his State. He now conducts his own laboratory and is an assistant instructor in this vocation at the State university.

One of the greatest human handicaps is blindness. But with proper training even this handicap, in most cases, can be overcome. A young man, blind since the age of 7, is now a successful piano tuner. The discovery that he had a talent for music led to a course in piano tuning. He now has a regular occupation and is no longer dependent upon others for a living.

*Accidents and their effects.*—Annually the number of workers injured in industry exceeds the number of our soldiers wounded in the World War. Each year men and women are incapacitated by injuries which are not industrial—injuries on the street, in the home, and on the farm; and, in addition, many thousands of persons are disabled by disease or through congenital conditions. The best accident figures obtainable show that each year from 110,000 to 120,000 persons in the United States become vocationally handicapped through incurring some form of permanent physical disability. To render these persons fit for remunerative work, capable of independent self-support and of economically competent citizenship, is the problem of the State and National Governments.

Distress follows rapidly in the path of accident and disease. Often whole families find themselves without breadwinners and without means of support. Children oftentimes must be taken from school and wives and mothers must find remunerative work outside the home for the support of the family. But personal distress is not the only result, for industry, the community, and the country are deprived of the services of a capable member—in many instances, a skilled worker. When we consider the appalling number of accidents occuring, we can form some conception of the tremendous economic loss which our country sustains through being deprived of the services of these men and women. In many cases injured persons find it impossible, through their personal initiative and ambition, to rehabilitate themselves to the extent that they are enabled to pursue some work which will bring them a good living. But the majority, if they do possess the courage, the initiative, and the ambition to rise

above their handicaps, find it impossible to bear the financial burden incident to successful vocational rehabilitation. Further, they do not know which way to turn, what the nature of their handicap prevents them doing, what they may undertake with fair prospect of success, or where to find work that they can do. They are in need of the services of some person who can see all the sides of the problem, who can inspire, guide, advise, assist them financially, if necessary, in learning some new work, and lastly, assist them in finding a job.

A case in point is that of a farmer who owned a farm in the northern cut-over pine region which was dotted with pine stumps and covered with second-growth timber. Such farms require much hard work and capital to put them on a paying basis. Consequently, he was forced to supplement his income from the farm by securing work in a portable sawmill in the neighborhood. One day he met with an accident whereby the saw severed completely from his body his right arm and part of the shoulder. Despite this handicap, with the aid of his wife and four children, he continued to eke out a living until further misfortune overwhelmed him by destroying through fire his buildings, his year's crops, and his machinery. Finally, through the foreclosure of a mortgage this farmer lost his equity in his farm.

Fortunately, just at this time, when all hope seemed lost, the State rehabilitation agency found work for him as a gang foreman on the county penal farm. He was given a course in agriculture during his spare time and evenings, and because of faithful service and ability to handle men he was promoted to foreman of all men sent to the institution. He was furnished a house for himself and family. During the course of two years or more he saved sufficient funds from his salary to secure, through the assistance of the State rehabilitation agent, his equity in his original farm, to which he returned a little later, having a broader experience and being better equipped mentally to operate his business, rear his children, and take his rightful place of leadership in his community than before he met with his accident.

In deciding upon a vocation for a disabled person the first consideration is to conserve his experience and training. If he can not be returned to his former job, his past experience may be used in a line of work where his injury is not a vocational handicap. For example, a carpenter, because of a serious injury to his hand, was trained as an architectural draftsman. The tendons of his right hand had been severed by falling glass, which made it impossible for him to handle carpenter's tools successfully. His past experience in building served as an excellent background for a job as architectural draftsman with a mill contracting firm at a wage larger than he was receiving before he was injured.

*The case method in rehabilitation.*—Disabled persons can not be rehabilitated in groups. Because of varying degrees of disability, education, age, capacity, energy, spirit, or determination, each case presents its own problems and difficulties and requires its own specific solution. The work is organized on what is known as "the case method." The disabled person is interviewed for the purpose of securing a complete inventory regarding his disability, education, occupational experience, capacity, personality, financial resources, attitude toward rehabilitation, his desires concerning return to employment, and opportunities for employment. All of these factors are thoroughly studied for the purpose of developing the best plan of rehabilitation in each case. Such a plan in all cases requires on the part of the rehabilitation agent, throughout the entire program, a general service to the disabled person in the nature of advisement, guidance, and cooperation. This service does not cease until the disabled person has been definitely established in remunerative employment.

*Methods of rehabilitation.*—In practice rehabilitation usually takes the form of one or a combination of two or more of the following: (1) Physical restoration—rehabilitation through restoration of physical function by surgical operation or therapeutic treatment; (2) artificial appliances—rehabilitation through adjustment of an artificial appliance restoring function to some member of the body; (3) establishment in his own business—rehabilitation through providing opportunity to disabled person to establish himself in his own business; (4) suitable placement—rehabilitation directly through placement for cases where training is not feasible; and (5) training—rehabilitation through training in specific vocation, whether in school, by tutors, or instruction given in commercial or industrial establishments.

Thus vocational rehabilitation is a highly organized form of educational service consisting for the most part of guidance, training, and placement. Often the rehabilitation department enlists the assistance of other State departments or of social or other agencies organized to give services which the rehabilitation department is not in a position to give.

*The economic significance of vocational rehabilitation.*—It is natural to raise a question whether the investment of Federal and State funds in vocational rehabilitation brings adequate returns. This is best answered by reference to the following analysis covering accomplishments in three States selected from several sections of the country and representative of employment conditions, both agricultural and industrial, in their respective regions. The figures are the result of study of case records by the vocational rehabilitation staff of the Federal Board for Vocational Education.

*Wisconsin*

Fiscal year of 1924:

| | |
|---|---|
| Total number of disabled persons rehabilitated | 235 |
| Total earnings before rehabilitation | $97, 415. 00 |
| Total earnings after rehabilitation | 261, 797. 50 |
| Per capita earnings before rehabilitation | 475. 00 |
| Per capita earnings after rehabilitation (average) | 1, 200. 00 |
| Per capita cost of rehabilitation | 220. 00 |

*Alabama.*—The average weekly wage at time of disablement of all persons rehabilitated in 1924 was $9.21, whereas after rehabilitation their wage was $21.75. Of the group rehabilitated 77 per cent had no earning power during the period of disablement, while 38 per cent had never worked prior to rehabilitation.

Again, the average weekly wage of those who were working at the time of disablement was $17.11, whereas after rehabilitation the wage of this same group became $22.75. Furthermore, the average weekly wage of that group that had never worked until rehabilitated was $19.90.

*Ohio.*—The following statement approaches from a different angle an analysis of economic returns on the investments by the State and Federal Governments in the rehabilitation work. A study was made of 457 persons disabled in industry in 1924 who were entitled to the benefits of workmen's compensation. Of this group 371 returned to their former or to some other employment without seeking the aid of the State department of rehabilitation. On the other hand, 86 of the group sought the aid of and were rehabilitated by the State department of rehabilitation. These 86 were shown to have an average earning capacity per annum, after rehabilition, of $1,165, whereas the 371 who were self-rehabilitated had an average earning capacity per annum of only $858.10. The average cost per case to the State and Federal Governments of rehabilitating the group of 86 was $128.71, the average age of the group when rehabilitated being 29 years. The average industrial life expectancy of this group is 20 years. If it is assumed that the increased earnings of the group will continue for a period of 20 years, an analysis will show that the cost of rehabilitation was only an insignificant percentage of the increased earning capacity resulting therefrom.

## STATISTICS OF REHABILITATION

The following statistical data will give some conception of the volume, scope, and characteristics of the national rehabilitation program since its inception:

1. The Federal act became effective June 2, 1920.
2. Forty States cooperating.
3. One hundred and sixty State workers employed.
4. Cases rehabilitated: 1921, 523; 1922, 1,898; 1923, 4,530; 1924, 5,654; 1925, 5,825; 1926, 5,604; total, 24,034.

5. Number of persons in process of rehabilitation: 1921, 4,792; 1922, 9,966; 1923, 15,515; 1924, 13,044; 1925, 12,727; 1926, 13,604.

6. Expenditures for all purposes, including administration:

| | Federal | State |
|---|---|---|
| 1921 | $93,535 | $191,347 |
| 1922 | 318,608 | 427,825 |
| 1923 | 525,387 | 662,783 |
| 1924 | 551,095 | 691,462 |
| 1925 | 519,553 | 667,665 |
| 1926 | 578,847 | 695,038 |

7. Average cost per rehabilitated case: 1922, $393.60; 1923, $262.29; 1924, $219.76; 1925, $226.55; 1926, $229.71.

8. Analysis of 1926 cases:

| | Per cent |
|---|---|
| (1) Rehabilitated through— | |
| School training | 39 |
| Employment training | 15 |
| Job restoration | 46 |
| (2) Sex— | |
| Male | 87 |
| Female | 13 |
| (3) Age— | |
| Under 21 | 23 |
| 21–30 | 33 |
| 31–40 | 21 |
| 41–50 | 14 |
| Over 50 | 9 |
| (4) Origin of disability— | |
| Employment accident | 49 |
| Public accident | 19 |
| Disease | 27 |
| Congenital | 5 |
| (5) Nature of disability— | |
| Leg | 34 |
| Hand | 14 |
| Arm | 11 |
| Vision | 8 |
| Legs | 7 |
| Multiple | 4 |
| (6) Schooling— | |
| Sixth grade and less | 33 |
| Seventh to ninth grades | 42 |
| Tenth to twelfth grades | 19 |
| More than twelfth grade | 5 |

## *REHABILITATION AND VOCATIONAL GUIDANCE IN AUSTRALIA*

*By S. H. Smith*

*Undersecretary and Director of Education of New South Wales*

We make an effort so to shape our primary and superprimary school courses that vocational aptitude shall be discovered and developed, but only recently have we made any definite move toward

the scientific guidance of our youth to those avenues of labor, industrial and professional, for which they are best fitted and in which they are likely to find the greatest happiness for themselves and give the best service to the State.

We recognize the value of tests of intellegence and school achievement, and we utilize these fully in the classification of the pupils. Our prevocational courses have been carefully devised to meet the needs of those boys and girls who do not take up the full high-school course, and these courses lead the way from the school to the factory, workshop, and office.

Toward the end of each year, all parents of children who are completing the primary course are addressed by me (by letter) as to the future of their sons and daughters. They are advised as to the facilities for higher education that are available. The various high schools are listed, the commercial, junior technical and domestic science schools within reach are named, the particular type of work done in each is explained, and parents are advised to seek the guidance of headmasters and mistresses as to the type of school that should be chosen. The teachers are able, from their observation of the children's aptitudes and inclinations, to proffer excellent advice as to the selection of a suitable avocation, and this close cooperation between parent and teacher is found to be of such value to the boys and girls concerned that it receives from the education department the fullest encouragement.

In Sydney a vocational guidance bureau has recently been established as a definite link between school and employer. It gets into touch with all boys and girls about to leave school and secures from their teachers the fullest information possible as to their educational qualifications, their character, their aptitudes, and their bent toward any particular line of work.

It is also the function of the bureau to gather information as to avenues of employment, their likely extension, and the number of young people they are likely to absorb in the immediate future and in ensuing years.

It is the aim of the bureau to establish the closest relations with the superprimary and secondary schools on the one hand, and with the employers of labor on the other. We depend chiefly on the common sense and penetration of the principals of the schools for reliable data as to the aptitude and inclinations of the children concerned, and so far little has been done to bring in the aid of the trained psychologist or psychological laboratory, though the value of such scientific work is fully recognized. The universities and teachers colleges have their laboratories for psychological research, but so far they have directed little attention to the question of vocational guidance. Universities have counsellors who watch the progress

of university students and expend some effort in placing graduates in suitable avocations, but there their activities end.

Probably our technical colleges do the best work in student guidance. Many young people apply at the colleges for advice as to the avocation they should follow, and although no set psychological tests are applied, much effort is devoted in a general way to the discovery of natural aptitudes, and suitable courses of study are recommended accordingly. Many boys and girls are thus constrained to set out in the most appropriate direction and something at least is done to prevent them from taking up unsuitable apprenticeships or entering on lines of work for which they are manifestly unfitted and in connection with which they are unlikely ever to meet with much success.

The rehabilitation of the young returned men of the Australian imperial forces engaged in the Great War of 1914 to 1918 gave us an opportunity for testing the value of vocational guidance. There were two classes of men to be dealt with, those who were partly incapacitated by war injuries and those who had enlisted at a very early age before their training for any particular vocation had been completed. Many of them were lads who had done no more than complete a fair school education. The repatriation department undertook, in thousands of such cases, to teach a trade or supply necessary training in some other direction. Most satisfactory results attended the whole scheme. Almost invariably the young men responded with extraordinary readiness to the training provided. This striking success was due in part to the age and experience of the trainees, but it was largely affected by the fact that there was a very careful process of selection, so that each man was allotted to the work for which he was, by nature and desire best fitted. Capable judges expressed the opinion that the outstanding feature of this tremendous undertaking was the apparent suitability of the men for the particular work in which they were trained.

The conditions, of course, were particularly favorable. There was ample money behind the scheme and no impediment in the way of a readjustment in the early part of the training, if such were deemed to be advisable. The success with which thousands of men were turned in a very limited time into skilled tradesmen has led to a critical reexamination of our apprenticeship system, and it has brought about a strong revival of interest in this question of vocational guidance.

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Mr. Smith supplemented his address with the following:

"I am sorry to say that the data which I have presented represent all that we have done. The problem of vocational rehabilitation of the disabled civilian is not a very important one with us. We have a class of 20 crippled boys in Sydney. With us public money is used

only when there is a public demand. There has been no demand for civilian rehabilitation. Our labor laws, which provide industrial compensation, and the sympathetic help from the technical colleges, furnish all necessary assistance for our disabled citizens."

## *MEDICAL REHABILITATION IN THE UNITED STATES*

*By Hugh Cumming*

*Surgeon General, United States Public Health Service*

History has not been kind to cripples. Throughout nature the disabled individual is given no second chance. This is epitomized by the most highly developed and socialized life cycles known in the world—the ants and the bees. As Fabre and Beebe have vividly portrayed, a malformed or seriously injured member must immediately be destroyed.

The human race, at first, was compelled to do likewise, sacrificing the individual for the welfare of the whole. Even the ancient Greeks reviled their cripples, and the Spartans made a practice of killing their congenitally deformed new born. In those days, as among uncivilized tribes now, any noticeable physical handicap was a stigma on the group, and destruction or active maltreatment has been society's only way of dealing with the unfortunate.

The great religious teachings throughout the world symbolized that strange growth of altruistic ethics involving a new regard for one's fellow men and consummated by the golden rule. Kindness to others was taught as the path to redemption. Thus the blind, the insane, the diseased, and the cripple became objects of a mass attack of commiseration, charity, and almsgiving. This was, to be sure, an improvement, even though the motive was the purely selfish welfare of the donor's soul rather than any sudden love of mankind. But the result was not wholly fortunate, as this almost sacred gush of the "milk of human kindness" was untinctured with the faintest safeguards of wisdom. Shameless begging and pauperizing largess ran riot, and still does, throughout the world.

I have stood on the Galata Bridge at Stambul and seen a vista of crippled and deformed mendicants which would make an ardent social worker pause for thought. We have also seen the flagrant products of the Chinese crippled beggar factories and the self-inflicted deformities of Indian fakirs, nor has it been many years since the padres released a horde of begging lepers every morning on the city of Manila, in order that the inmates might not want. These are contemporary facts and bring us to the threshold of our subject.

Although some interest in the subject of crippled children had been shown prior to 1890, and even earlier in the nineteenth century efforts had been made to recognize the needs of the blind, no correlated plan of general rehabilitation was contemplated until a very few years before the World War. Probably the greatest single factor was the rise of workmen's compensation, beginning as it did in Germany and culminating in the various compensation acts in the United States from 1911 on. The charity organization societies had interested themselves in special problems of vocational training and still do heroic work among individual cases, but it remained for the concept of compensation, stimulated by the great problem of reclaiming millions of disabled service men, to coordinate the various trends I have mentioned into one comprehensive plan which would include all disabled persons. Without the inspiration of workmen's compensation activities it is doubtful whether we would have been prepared for the sudden problem thrust upon us by the World War. One of the first States to pass a compensation act, Massachusetts, was also the first to give legal recognition to the training and placement of incapacitated persons. Other States had also been studying the problem, and it was not long before a general movement in this direction became apparent. In fact, the creation of the Federal Board for Vocational Education, patterned, like the Public Health Service, primarily for civilian relief, paved the way for the prompt and effectual handling of disabled soldiers when the crisis came during the war. These two services were in a position to immediately organize and lay the foundations for the gigantic task which has so ably been carried on by the Veterans' Bureau. Without these two establishments and their ready personnel, equipment, and experience, the chaos following that great emergency would have been indescribable. Eventually the work of the Veterans' Bureau was properly and necessarily centralized as an independent activity, and both the Vocational Board and the Public Health Service were released to carry on their permanent functions. In the case of the Federal Vocational Board, however, its duties have become largely the granting of financial aid and the providing of an advisory service to the various States. This has been and will continue to be of inestimable value in stimulating and directing the general wave of interest in the whole problem.

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Most of the States have followed the wise example of the Federal rehabilitation legislation in allowing sufficient latitude of terminology when it comes to "disabled persons." Any physical defect or infirmity causing a loss of earnings is included in most of the definitions. Thus not only the crippled, but the blind, the tuberculous, and the cardiac are frankly included and no attempt at limitation is made on

the basis of causation, whether congenital, industrial, or otherwise accidental. Mental disabilities have so long been the subject of special activities that although similar principles of rehabilitation are not infrequently applied, these cases more properly come under different authority. Previous efforts to meet the problems of the blind have been attended with the establishment of such excellent institutions and educational adaptations that the real burden of this work has been carried on as heretofore. At first it was feared that the newly established rehabilitation resources would be overwhelmed by these cases as well as the tuberculous and cardiacs, but this has emphatically not been the case, although the procedure, as far as actual rehabilitation goes, is in many respects identical. The future lies open, however, to a further inclusion of all these unfortunates as rehabilitation becomes more of a recognized mechanism of relief, and the social problem of returning the disabled to industry, whoever he may be or whatever may be the matter with him, is rapidly becoming a matter of standardized procedure which will be under the general direction of State and national advisory bodies.

It is impossible to speak of the reestablishment of the disabled without analyzing the constituent factors involved. Yet the progress from physical rehabilitation, through occupational therapy, to vocational training is so gradual that it is only by the closest cooperation and understanding between the industrial surgeons and the teachers and placement advisors that anything can be accomplished.

It may truly be said that occupation is as necessary to man as food and drink. As Galen puts it, "employment is nature's best physician." The disabled need physical activity, first to divert hypochondriasis, then to restore bodily function, and finally to readjust themselves to the work of life.

At first, diversions are needed to occupy the fingers. Such things as games and puzzles and simple tasks with clay and beads and wood and textiles that can be done in wards and wheel chairs, all serve to check unhealthy thoughts and prevent morbid introspection. No one other factor so well serves to prevent despondency and maintain the morale of the recent cripple.

Gradually curative exercises relieved of monotony by being carefully incorporated in useful work will encourage the patient to redevelop his muscles, often in spite of pain, which protests against even passive motion. The play spirit of the first diversions are blended with craft work designed to recoordinate with the calling most suited to the individual and yet subject to the surgeon's supervision from the standpoint of therapeutic value. Here is where the gradual approach to the question of future vocation should be met. The heart of many a cripple has been broken by a well-intentioned effort to instruct him in the making of worthless gewgaws and monstrous

dilettante objects of virtu which have no inherent merit or no active market save at a charity bazaar. Why waste initiative and morale in teaching workmen and sailors painting, music, embroidery or whatnot? This second phase of occupational therapy, while primarily curative must be directed toward work, no matter how slight, of real use, and must convince the patient, at least, of its prevocational value. Not only the mind and the body, but the spirit, should be healed through occupation. Sterotyped routine at this stage will defeat the orthopedist's purpose of reteaching motion unconsciously and naturally. Needless to say, massage and hydrotherapy may be concomitants of the entire period, and it is during this time that intensive training in the use of prosthetic appliances may be accomplished.

The last stage of readjustment or vocational rehabilitation proper demands only the slightest supervision from the medical standpoint. Here, too, the work of the reconstruction aide and the occupational teacher will be supplanted by that of the technician and vocational adviser. A highly complex specialized personal service, following case-work methods, and guided by a truly individual approach, has been found by experience to excel the earlier theoretical haphazard group-teaching efforts. This part of the work is the culmination of the entire scheme of things and represents the highest form of socialized endeavor, requiring, as it does, really exceptional knowledge and individual ability on the part of the director and an organization efficiency and experience which is only now in the building.

I am perhaps better qualified to speak for my profession and my service from the standpoint of physicial restoration than about the later requirements of education and placement. The rise of such specialities as orthopedics and mechanotherapy and physiotherapy has been contemporaneous with the rehabilitation movement. The surgeon of lesser experience is no longer sufficient in such cases as we deal with here. The great industrial plants, the insurance carriers, and the compensation boards have come to realize that the most economical treatment must invariably be the best obtainable. Nor does the mere setting of a man's arm or leg comprise his entire treatment as heretofore. The orthopedic surgeon brought to our attention the importance and necessity of intensively following through the care of these cases with every available resource of mechanical and physical treatment, discharging no case until maximum restoration has been accomplished. This naturally involves an expenditure of time and patience on the part of the attending surgeon, but although the initial cost is greater, the saving to the individual, to industry, and society as a whole is manifold.

There is still a dearth of specially qualified bone and joint surgeons throughout the United States; in fact, there are many cities without a single orthopedist. But there is an even greater scarcity

of hospitals prepared to do reconstruction work. Almost any general hospital is equipped with every instrument and facility necessary for the other surgical specialties, but the orthopedist must still rely largely on his private collection of instruments and appliances. A mere handful of hospitals, as represented by the Reconstruction Hospital in New York and Willis Campbell's Hospital in Memphis, have very recently been organized primarily with the special object in view. A few States, New Jersey especially, and Wisconsin and Virginia, have directed legislation toward the establishment of reconstruction clinics and the experiment has always been attended with unqualified success.

But this most fundamental factor of nation-wide rehabilitation is hardly in its infancy, even though the ultimate success of all such work must eventually rest upon a medical foundation. The Public Health Service has been fortunate in obtaining the services of consultant orthopedists at its marine hospitals, wherever such services are available, as the service has had to assume responsibility first for the disabled service man, and now for the treatment of the beneficiaries of the Federal Employees' Compensation Commission. This work has opened our eyes to the problem with which some of the States are only beginning to struggle, and I can offer my heartfelt sympathy, and I am sure the cordial cooperation of the Public Health Service against the days of trial and tribulation involved in establishing and organizing any plan of coordinated nation-wide reconstruction work.

In presenting some particulars of the work of civilian rehabilitation in the United States it is necessary first to point out the peculiar system of government in that country, which in spite of reiteration seems to be imperfectly understood abroad. In general, it must be understood that the United States consists of 48 States, each one of which is sovereign as regards internal affairs, subject only to the Federal Constitution, and to such nation-wide laws as have been promulgated by the Federal Congress by virtue of powers ceded by the States to that body.

It is therefore impossible without considerable study to answer questions of the following type: "How do you handle your rehabilitation problems in the United States," for the reason that each State has its own way of handling this and almost all other public problems.

In the present instance, however, the question is less difficult to answer since the problem has received attention only within recent years. Up to the time of the passage of the civilian rehabilitation act only seven years ago, only six States were reported to have inaugurated any official service of this nature. The matter was left to chance attention by clinics, hospitals, and other institutions, under official, voluntary, or purely charitable auspices.

The act referred to, however, has had the effect of enormously stimulating State activity along this line, and of unifying methods, securing economy, and developing technic.

Thus the annual report of the Federal Board for Vocational Education for 1926, in its section on civilian vocational rehabilitation, shows that 39 States have accepted the terms of the act, and that of the remaining 9 States the prospects are good for acceptance during the current year in at least 5 or 6. This means that at the present time at least 39 States have established machinery for the rehabilitation of the handicapped, have adopted acceptable methods of procedure, and have appropriated sums of money equivalent to the Federal allotment. Up to the end of 1926 some 24,000 persons had been returned to self-supporting employment under this act, while at that time 14,000 more were in process of rehabilitation.

Five thousand six hundred persons were rehabilitated during the fiscal year 1926.

Accurate statistics of the number of persons disabled annually so as to require rehabilitation are not available as yet, although the means of ascertaining them are being developed. However, it is estimated that 50,000 to 70,000 would approximate the number. It may be judged from this that the efforts of this new activity are meeting something like only one-tenth of the demand. It is felt, however, that under the innumerable difficulties which attend the inauguration of new activities in a country so large and so diversified as the United States very creditable progress has been made.

The expenditures in this service are approximately as follows: The Federal appropriation is $1,034,000 annually, to be made available to the 48 States. To the 39 States now cooperating about $877,000 is allotted. In the last fiscal year, in round numbers, $592,000 was expended by these States, which expenditure represents 68 per cent of the allotted Federal funds. During the same year (1926) these States expended from their own moneys $707,000. This means that for every dollar of Federal money that was expended $1.19 of State money was expended. However, the proportion of State money expended is in reality much larger, for much money is expended each year by the States for certain phases of the rehabilitation work that are not subsidized from Federal funds. Fifteen States expended last year practically all of their Federal allotments.

The difficulties which have been encountered in the United States have chiefly been in the lack of public appreciation of the needs or knowledge of the means afforded, so that development of the service has had to wait upon popular education. So also a body of administrators for this new activity has had to be built up and instructed. The problem is in itself peculiar since the individuals to be helped must be treated individually, their needs being extremely diverse

and not susceptible of mass treatment in groups or in a single institution.

Up to the present time, owing largely to this need for individual attention, the overhead or administration costs have been high, about 55 per cent of the total appropriation. The cost of rehabilitation per case has now been reduced to about $235, which for the time being is regarded as a minimum compatible with sound work. Against this cost it must be remembered that in most of our States it costs from $300 to $500 a year to maintain a person unable to work in a poor-house or a custodial institution. When we consider further that the average expectancy of life of the rehabilitated is about 20 years, the saving, even with present imperfections of operation, is apparent.

It is shown further that the average weekly wage of restored persons is about $26. On this basis a rehabilitated person would not only save the State some $300 to $500 a year in maintainance, but at a cost of $235 for one year would perform work worth some $1,300.

In the development of this work in the United States a great many problems of administration, education, technic, etc., have been studied, and there is now a considerable literature available in the form of pamphlets, etc., dealing with these subjects. Some of these are doubtless of interest to other countries, and they may be obtained from the Federal Board for Vocational Education, at Washington.

Perhaps more important to the future of the race, as well as to the present efficiency of our people, is the increase in our knowledge of so-called mental conditions and its application to rehabilitation. There was a time, within the memory of some of you, when the idea prevailed that there was a definite line, an impassable gulf, on one side of which were those called sane and on the other those denominated insane. We now know that of the millions of individuals launched upon the sea of life few are permanently sheltered within the calm harbor of perfect sanity and high mental efficiency on the one hand, or are hopeless wrecks upon the rocks and shoals of hereditary or acquired total lack of adaptability to their environment on the other hand. The great majority of the human race are barks upon the sea of life, at times wafted into the smooth waters of that happiness which follows a perfect functioning of mind, psyche, and body, by internal and environmental influences, and are at other times, by some mischance, driven perilously near the rocks. There is a class of these individuals who, under ordinary conditions, safely and happily perform their daily duties and enjoy contentment, but when the stress of unusual emotions, disfunction of the body secretions, or bad environment overtakes them, they are unable, unaided, to trim their ballast and adjust their sails to the winds of adversity and misfortune. To assist this group not only, but also to keep

those of us whom we designate as normal in the high state of efficiency and happiness, the energies and research of the modern psychologist, psychiatrist, surgeon, and internist are now being devoted. In addition to which, and more important, perhaps, for the future of the race, preventative medicine is exerting its influence in eugenics and in the elimination of those diseases which influence physical and mental development. It is gratifying to note the constantly increasing work in the United States along these lines.

I quite realize that this brief review does not cover this large subject adequately. What I should like to emphasize is the fact that our first duty should be to develop public health so that these crippling handicaps of mind and body may be prevented so far as possible. But since there will always be some imperfections in these methods, since even if crippling disease should be conquered there would always be unavoidable accident, we must make provision for the salvage of cripples and their return to useful employment. Such provision, it has been shown, has been initiated in the United States and bids fair to grow with time into a very complete and satisfactory service. The economic returns are measurable and demonstrable, but the returns in happiness to those restored and to all who are interested in them can not be measured in money although it is quite safe to say that it exceeds the purely economic return in importance and in value to the Nation and the race.

No discussion of the progress and development of medical rehabilitation in the United States would be complete without mention of the splendid work which has been initiated and is now being carried on by several of the national fraternal orders in our country.

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*Discussion*

Mr. Bond. As Mr. Wright has told us, the rehabilitation fund can not be used for surgeons' fees and hospital services. It can only be used for the training of cripples and for buying instruction supplies. We had first to find a friendly orthopedic surgeon. We found one in Doctor Campbell, of Memphis, Tenn., who had studied under Doctor Lorenz, of Austria. Upon his return to Memphis he offered to operate free on all crippled boys and girls of Mississippi who were unable to pay for his services if we would bring them to him.

There was no place for the cripples to go when they were convalescing from an operation. The charity wards in the hospitals in Memphis were soon filled. So we had to get a hospital. Every Thanksgiving every school boy and girl in Mississippi is given an opportunity to contribute 10 cents and every teacher a chance to give 25 cents toward a fund for the benefit of these cripples. We

have approximately 5,000 cripples on our list. We have gotten in touch with practically every case in Mississippi. The operations were performed for the most part during the vacations.

The most complete piece of work in education in Mississippi has been that with the physically handicapped.

Doctor MURAKAMI. I know of only one endowed institution in Japan, under municipal supervision, which is doing something in this line. This institution is located in Tokyo. I will make inquiries and send in a written report later.

Mr. GOURDON. In France we have different provisions for taking care of the deaf, dumb, and blind, and those who have nervous ailments. For those disabled at work special laws provide subsidies that enable the disabled person to continue in the same occupation, if possible, even if at a smaller salary.

In the World War we had a million or more disabled soldiers, and it was necessary for the Government to take care of this great number. In the small villages the Government established schools especially devoted to those who, during the war, had contracted a nervous malady or tuberculosis. French societies, private initiative, and foreign initiative have all cooperated in this task. I am particularly grateful to the American societies which, among other institutions, established a hospital for the blind, in which I have been. Little by little the men have all been rehabilitated. The schools are now being made available for the civilians, and there are now in France 20 schools for the rehabilitation of disabled civilians. Therefore, in France civilian rehabilitation follows military rehabilitation.

Mr. KENNEDY. New Zealand, so far, has not done much in the work of rehabilitating civilians. We have a workmen's compensation act, under which every employer is responsible and must insure the life of his worker, in order that he may avoid the necessity of having to pay out of his own pocket in case the worker is disabled.

Our chief work has been in connection with the blind. There are several institutions which are doing magnificent work for the blind. They are taught brush and basket making, the tuning of pianos, how to teach music, and how to play various instruments.

I have read Henry Ford's remarkable book, in which he declares that he can furnish employment for every case of disablement and pay full wages. He tells of a blind man he employed who could handle three times as many parts as the average worker; that is, do the work of three men. I recall also reading about a young boy of 13 years who lost his sight and yet became an author and a naturalist, and wrote 26 volumes on natural history. God took away his sight that he might save his soul.

New Zealand has two remarkable cases. One was the son of the Hon. Scoville McKenzie, who lost his sight during the war, but later

became a writer and lecturer and propagandist for the blind. The other was the son of Sir James Allen, now in London. He has written two volumes of plays and one of poetry, and has become stage manager and superintendent of some of his plays. Thus the Lord, our maker, supplies compensation to afflicted persons.

Mr. LIGOT. The Philippine Government is not so much concerned in the vocational rehabilitation of disabled civilians, for the following reasons:

(1) Civilians who were partially or totally disabled in the Spanish-American War were granted remunerative pensions, by an act of the Philippine Legislature, and were left free to engage in occupations within the scope of their mental and physical powers.

(2) Deaf and blind children are housed, maintained, and educated by the Government.

(3) Crippled children are cared for in the Masonic hospital, under the auspices of the Masonic fraternity of the islands.

(4) Injured workmen and laborers receive compensation according to the provisions of the "accident act," enacted by the Philippine Legislature. As there are but few manufacturing establishments in the islands, and their machinery is well protected, an insignificant number of accidents occur.

I believe that we should include in the scheme of vocational rehabilitation those confined in penal institutions, so that when they are liberated they will not be a burden to society. Along this line of endeavor the Philippine Government is doing good work. The magnificent "Bilibid furniture," constructed of wood or rattan, bamboo or grass, is made in the Bilibid Prison, Manila. All prisoners whose sentences are for more then one year in jail are sent to Bilibid Prison, where they are compelled to do some kind of labor. Some teach other prisoners, some do clerical work, but the majority of the inmates engage in woodworking, iron construction, jewelry making, repair shopwork, etc. By these tasks and handicrafts the prisoners are rehabilitated and made fit members of the social and industrial order. The products of their skill are sold, and a part of the money received therefrom is given to them when they are released. The same plan as the foregoing is pursued in the provincial jails.

Mr. JENSEN. We do not use the entire amount of money appropriated by the Federal Government for rehabilitation work in Utah. We are rehabilitating our share of the disabled—from 25 to 50 people each year. Last year various associations, institutions, churches, and chambers of commerce cooperated with us in a state-wide survey. We now have recorded each individual in the State who needs rehabilitation. We emphasize the rehabilitation of the blind. Salt Lake City has assisted in contributing a fund for this class of work.

In our State the rehabilitation of the blind is about complete and we are devoting ourselves to other kinds of rehabilitation.

Disabled individuals up to 50 years of age who have families are placed on our rehabilitation list. We take care of individuals afflicted with paralysis of the lower limbs or arms.

We have no difficulty in raising the appropriation to match the Federal subsidy in Utah for carrying out the rehabilitation act.

(Mr. Wright asked Mr. Crawford as to certain phases of rehabilitation work in Hawaii.)

Mr. CRAWFORD. In 1925 our Territorial legislature took up the matter of accepting Federal funds for vocational work and rehabilitation. The legislature accepted the fund for vocational education. Rehabilitation is being satisfactorily handled here under the present arrangement. Here everything is controlled by the sugar plantation companies. Instead of a scattered rural population, the plantation people are centered in small industrial towns and there is very little rural population such as we have on the mainland. The plantations handle their rehabilitation cases themselves. If a worker loses a limb he is given the best job for which his capabilities fit him, but he is not necessarily sent to school. All the plantations carry insurance for their employees under the workmen's compensation act.

The Shriners have done considerable work here especially for children. Five years ago they established a hospital, which has handled several hundred cases of crippled children. There are a good many hundreds of children waiting for admission.

There are at present few cases due to industrial or other accidents which need rehabilitation. Our rehabilitation problem is not a serious one.

Mr. NOVO. The industrial system of Mexico is not highly developed. In our factories we have few accidents, but when they do occur there is a special law which provides that the owners of the factory shall compensate the disabled workmen.

Besides that, there is a school for the blind, deaf, and dumb men. Blind men mainly learn music and they have a very fine orchestra. The students in the school for the deaf and dumb are taught to be carpenters, to make furniture, etc.

Mr. WRIGHT. For many centuries the problem of rehabilitation was taken care of by the family itself, but under existing conditions this is not possible. Nowadays, the individual is more dependent upon himself than upon his family, and, therefore, when he is unable to support himself, he has to fall back upon society, which has taken the place of the old family. Society in its turn has found it necessary to furnish various institutions for the rehabilitation of its disabled members.

Various methods of rehabilitation have been discussed to-day. I believe that the modern method of rehabilitating the disabled civilian so that he may continue to be self-supporting, instead of being a burden on the community, will be more widely adopted and followed in the years that lie ahead. The injured man does not like to think of himself as being disabled. We who are able-bodied owe it to him to give him the opportunity to make himself economically independent. The program we are following makes an asset out of a liability—an independent human being out of a dependent human being.

(Mr. Smith asked permission to correct a misstatement made in his address earlier in the afternoon—that Australia had done nothing in the way of rehabilitation except to establish a small school for cripples in Sydney. "I should have said that we have made full provision for the blind, deaf, and dumb, and mental defectives.")

Doctor TIGERT. During the war New Zealand and Australia did some remarkable rehabilitation work in London for their disabled soldiers. This was further advanced than any similar work that has yet come to my knowledge.

Adjournment.

## *Thursday Morning, April 14, 1927*

*Topic: "Standards Of Child Life"*

*Subtopic: "Care of the Mother and the Infant, and Health Instruction"*

*C. N. Jensen, State Superintendent of Public Instruction of Utah, Presiding*

The session was called to order at 9 o'clock by the chairman.

### *CARE OF THE MOTHER AND CHILD AND HEALTH INSTRUCTION*

*By W. F. Kennedy*
*Delegate from New Zealand*

The late Prof. Henry Drummond, who was as well known 20 years ago in the United States of America as he was in England, said somewhere that nature had taken 500,000 years to make a mother. (I am quoting from memory.) These are not his exact words, but his meaning clearly was that a mother is the crowning work of nature—the mountain peak of evolution. It takes an inspired preacher like Drummond to tell us that. We ordinary people do not think of it. A mother is just a mother, and that is all there is to it.

Away down in New Zealand there is, however, a man who realized quite a number of years ago what a mother and her child meant to the world. He saw the awful, terrible ignorance that prevailed with regard to these two human beings, and the awful waste of child life as a result, and he began working out a reform system of treatment, which by slow degrees was accepted in his own country, and there met with such unparalleled success that this obscure country doctor's name is now known throughout the civilized world. New Zealand is proud of Sir Truby King, whose genius and tireless enthusiasm has educated public opinion to the value of child welfare and expert instruction in mother craft. Last month a new Karitani hospital (where babies are cared for and nurses trained) was officially opened at Wellington, New Zealand, by the Duke and Duchess of York. Thousands of grateful parents throughout the country to-day can

testify to the assistance and inspiration given to them by the Plunket nurses. As the system developed, the infant mortality rate steadily declined. Taking the average between 1908–1912, the mortality from infantile diarrhea during the first two years of life was 31 per thousand in Sydney, 27 in Auckland, and 9 in Dunedin. In the next five-year period, as the result of the system and service, the rate per thousand dropped to 19 in Sydney, 5 in Auckland, and three-fifths in Dunedin. In 1925 the rate showed a further decline—to 11 in Sydney, 3 in Auckland, and 1 in Dunedin. For three successive years (1922 to 1924) we are told that "not a single child died of infantile diarrhea in Dunedin."

These are remarkable and convincing figures, and a splendid tribute to Sir Truby King's labors. "The whole strength and virtue of the movement," as an editorial in one of our leading papers says, "resides in the fact that it is a simple reversion, scientifically directed, to the fundamental laws of nature from which, in the course of generations, there had been a gradual and insidious departure." The movement was made popular by the establishment of the Plunket Society (named after Lady Plunket), whose aims and objects are as follows:

(1) To disseminate accurate information on matters affecting the health of women and children, by means of lectures, demonstrations, newspaper articles, pamphlets, correspondence, teaching in the home, and otherwise.

(2) To uphold the sacredness of the body and the duty of health; to inculcate a lofty view of the responsibility of maternity, and the duty of every mother to fit herself for the perfect fulfillment of all natural calls of motherhood, both before and after childbirth.

(3) To provide and employ nurses ready at any time to give advice and instruction to mothers, in the home and elsewhere, with a view to conserving the health and strength of the rising generation, and rendering both mother and offspring hardy, healthy, and resistive to disease.

(4) To promote legislative reform in matters pertaining to the health of women and children.

(5) To cooperate with any present or future organizations which are working for any of the foregoing subjects.

The infant hospitals, which have been established at various centers through Sir Truby King's efforts, aided by the Plunket Society, are taken advantage of by rich and poor alike. Miracles in the way of saving delicate children have been and are still being constantly performed to the great delight of parents.

Sir Truby, who is now medical director of babies of the Empire Society of London, still resides in New Zealand. He has recently built himself a wonderful house on the highest point of the hills near

the city of Wellington, where he gets every wind that blows but from which he has sheltered himself by ingeniously constructed fences, hedges, etc. He has published four books and pamphlets, three on the care and feeding of the baby and the mother, and one on "The Story of the Teeth and How to Save Them."

Now, a word about the system. I am not a medical man, and have not gone at all fully into the matter, but I notice that the expectant mother should take plenty of fresh air and proper exercise. She should never resort to drinking ales and stout, and should never smoke, as these poison the blood, and convey their baneful results to the growing child. The principle, however, upon which Sir Truby King's system is built is the feeding of the child, and right at the beginning he laid it down as an axiom that *every mother can nourish her offspring in the natural way*, the exceptions being so rare as merely to prove the rule. Day in and day out, he talked, lectured, and wrote about this rule until to-day little short of a revolution has been wrought in the matter of baby feeding. To help mothers who are unable to feed their children entirely, he prepares humanized milk from cow's milk. However, the important thing to teach mothers is, as Doctor Fairburn of London says, that failure in nursing is almost always due not to the failure of nature but to the failure to live in accord with natural laws and requirements.

To the mother nothing but good results from completing the cycle of motherhood. The mental and moral effects on her are difficult to express and impossible to define precisely, but she is always a better woman for having nursed her child.

Dr. Truby King's assertion that every mother can nurse her child is derived from the practical experience of 20 years at his hospital for mothers and children near Dunedin, New Zealand. Here many mothers, who had been considered unable to feed their children, in a very short time were able to do so with inestimable benefit to both mothers and children.

To the mothers who complain they are unable to nurse their children, Doctor King would say with Milton, "Accuse not Nature; she hath done her part. Do thou but thine."

He points out that the Almighty, who has given them the miraculous power to bring forth life, is not likely to fail to give them the nourishment needed for the continued life and growth of their offspring.

*The first practical step toward ensuring normal motherhood is to bring back to women faith in themselves—which is another way of saying "faith in the Almighty."*

As in almost every other venture in life, nothing interferes more with success in this matter than lack of self-confidence, and the definite conviction that you are not going to succeed. The normal woman is designed for the complete nursing

of twins, and a considerable number of mothers fail in nursing not because they have too little milk, but because they have too much in the early stages.

The trouble, then, is that unless proper care is exercised the baby gets overfed and baby and mother suffer in consequence.

The only way to prevent such failures in future is to interest and train all women in the arts of motherhood and mothercraft, and to make every girl realize, before she marries, the transcendent importance of normal maternity and breast feeding for the lifelong health, happiness, strength, and fitness of herself and her potential offspring.

Now, in this matter the great need is to convince the mother and make her a willing coworker. Sir Truby King says that in his experience no illustration used in the past has proved so convincing as a recent conversation he had with an able merchant, dealing specially in wool and hides, who remarked "I don't need convincing as to what mother's milk must mean for the child. I know it already in my own business. Why, *I can tell you how your boots were fed,*" and then he proceeded to explain the superiority of calfskin from calves reared by the mother's milk to that of bucket-fed animals. It was a common thing to say when handling first-rate calfskin: "By Jove, that's a good piece of stuff. Why, that's milk fed." Hair, nails, and teeth, Doctor King says, all are formed in the same way, and bad nutrition in prenatal life and early infancy leave their brand on the future potentialities of every tissue of the body.

In my own humble opinion, we shall all have to get back to nature more in the way of food, and I can not imagine a reform that would have a greater moral and spiritual effect on the race than a return to the simple natural foods, the fruits, nuts, grains, and vegetables that nature so generously supplies, many of which we spoil through our custom of cooking and refining.

I should like to say something against the bad habit of whipping children, which I strongly disapprove of, and also to tell you about the maternity hospitals we have in New Zealand, which were established by legislation, introduced by the late Right Hon. Richard Geddon, New Zealand's greatest Prime Minister; but my time will not permit, so I will conclude with one or two tremendously important passages from the last pages of Sir Truby King's booklet "Natural Feeding of Infants," which I think should be taken serious heed of by the people of America. (Doctor King states they are the conclusions of Geddes and Thompson and Doctor Sutherland.)

Every link of highest love, sympathy, and altruism possessed by man—all that is noble and best in us—has been gradually forged through the ages out of love, and sacrifice for mates, and love and sacrifice for offspring, showing itself very early in the animal series and culminating in ourselves—the lifelong devotion of the mother to her child added to the earlier giving up of a part of herself for the sake of a new being.

Devotion to family, clan, and country (patriotism) and devotion to the broad interests of mankind (humanitarianism) are built on the same foundations.

If the foundation is sound, all will be well with us, but not unless.

History shows that the decline of the great nations and empires of the past was due to a falling off in home life and in the unwillingness of man and wife to take the responsibilities of parenthood.

The decay of Greece and Rome are not due to a falling off of prowess, but to increase in luxury, lessened exertion, lessened contact with the open air, and increased selfishness, which showed themselves in a disinclination for the ties of marriage and parenthood. But it is only too true that birth statistics in the United States of America show that the prospect of the human harvest was never worse in ancient Rome than it is there to-day. The problem is a big one, and the obstacles in the way are stupendous, but surely some way can be discovered to enable the married woman to complete the cycle of motherhood honorably and faithfully, instead of making it easy to spoil herself and her child, at the most momentous period of life for both, *merely in order to supplement the husband's earnings.*

But we have no right to fold our hands and no reason for dispair. All we have to do is to look ahead, do the things we have left undone, and by teaching, training, and helping the mothers of to-day and of the next 20 years we can insure, as far as possible, that every new arrival and potential parent of the future shall grow up strong, healthy, capable, and fit in due time for full citizenship and ideal parenthood.

## *NATIONAL STANDARDS IN HEALTH INSTRUCTION*

*By Mrs. A. H. Reeve*

*President, National Congress of Parents and Teachers*

The hope of improvement throughout our social structure lies largely with the children. The child, therefore, must be our point of departure in this discussion and upon him must our chief emphasis be laid if we are to achieve progress which will be of permanent value to mankind, to bridge the gulf between the knowledge of experts and the practice of the general public in matters of child health.

Health has been defined as "the quality of life that renders the individual fit to live most and to serve best," and health education as "the sum total of all the influences which impinge on the child and which favorably affect the formation of habits, attitudes, knowledge, and skills, with regard to community as well as personal health."

We can not standardize children, even if we would, for conditions of climate and many other factors materially affect the health of any community and so cause a shifting of values. For example, typhoid immunization is of paramount importance in the South; goiter is a problem in some areas and is practically nonexistent in others; the midwife is a menace in certain sections and a negligible quantity in

others. Standards, not standardized children, are what we need—standards which will help us to know when we have produced the best possible child in its given surroundings. In his recent address before the American Health Council, Secretary Hoover made a plea for a standard of normality which should make visible the attainable; should supply in terms which the average father and mother can understand the definition of the child whose organs are functioning normally, whose growth is unimpeded, whose senses are developed unhampered, and whose potentialities are being realized mentally, morally, and physically. He urged that this normal child should be made a familiar figure in every home, in order that parents may have a measurement for their shortcomings.

It required the horror of the World War to jolt our Nation out of its complacency as regards its children, for we learned then that although 80 per cent of all American babies are *born* perfect, 80 per cent of our men of draft age were below normal, and one-third of them could not pass the requirements for military service, even in a time of such desperate need as we faced in 1917. In reply to the inquiry as to how such things could be in a country blessed with a generally favorable climate, great abundance of food, and having comparatively little grinding poverty, the experts stated that the conditions were due to improper nourishment, impure food, lack of fresh air and recreation, faulty mental complexes, and absence of medical attention to the minor ills.

As a result of this report, an organization known as the American Child Health Association, of which Mr. Hoover is president, made a survey of 86 of our large cities and some further discouraging facts were brought to light. Though it is admitted that milk is an essential for children, out of 35,000 examined nearly one-fourth were receiving none at all, while 42 per cent had less than the pint which has been set as the minimum. Only eight of the 86 communities Pasteurized the milk supply, and within four years there had been 18 preventable epidemics in those cities.

A leading medical authority in this country states that of the 10,000,000 preschool children in America about one-fourth suffer malnutrition, almost half have postural defects, and from 60 per cent to 70 per cent have defective teeth. This means that even to-day approximately three-fourths of our children enter school handicapped at the start; and of these 30 per cent fail in the first grade! The latest available statistics tell us that the maternal mortality in the United States is higher than in most other civilized countries, being 6.6 per thousand, and that of the 15,375 women dying in childbirth within the death registration area at least half could have been saved by proper prenatal education. Our infant mortality rate is also unnecessarily high, only 6 foreign countries out

of the 17 whose rates are available being lower than the United States, which records a death rate of 72 per thousand, or 190,000 infant deaths, in 1925, while New Zealand had in 1924 a rate of but 40 per thousand. In England and Wales the rate was 70 per thousand, a remarkable gain since 1900, when the figures were 156. In the admirable outline of standards of child health recently issued by the United States Bureau of Education, "Is Your Child Ready for School?" Dr. James Rogers says that "the best time to begin to get the child ready for school is before he is born." The first requirement, then, in the consideration of health standards, would seem to be a sound prenatal and postnatal program of education both for the general public and for the individual mother, in order that being a baby may cease to be classed among the "extrahazardous occupations." The human infant is the most helpless as well as the most unfortunate of all animals, his parent as a rule having neither the instinct of the brute mother nor the training needed for motherhood as a profession outranking in importance science, medicine, and the law, and far outweighing all three in its effect upon the life of the community and of the Nation.

There is immediate need for the development of systematic health conferences to supplement the clinics now rapidly spreading but whose influence is confined too closely to the improvement of the condition of the poor; for the average college-bred mother is as lamentably ignorant as is the illiterate parent, and depends upon the physician or the qualified nurse for the welfare of her children. The most permanent effects of the efforts of health authorities may be expected from the homes in which a real health consciousness may be aroused. We have passed beyond the stage of considering only the detection and correction of defects as making up an adequate health program, and have reached an appreciation of the positive phase, in which the right attitudes of mind are developed and both parent and child are trained in the regular observance of health habits. To this end the first line of approach is the public health nurse, who more and more is becoming an educator in response to the pressure of circumstances—the demand creating the supply. Supported by such powerful auxiliaries as the clinics, better pediatrics, better obstetrics, newer knowledge of preventive medicine and of nutrition, the nurse goes into the home to carry her message to the woman in need. Trained at first only in the care and cure of the sick, she is now being equipped to teach health. More than that, with our advancing understanding of child nature, mental hygiene has come to be considered as merely the other side of physical hygiene, its essential complement for well-balanced living, and the nurse must learn and be prepared to teach that nutrition is half food and half the mental condition under which that food is consumed and digested.

The chief difficulty experienced by the public health nurse has been that of reaching directly the parent in the home, except in cases of acute illness. Until recently it has been necessary to make the contact through the child. Though it is true that the surest way to reach a mother is through mutual interest in her children, yet it is not by that channel that the approach has been generally attempted; it has rather been through teaching the child certain health facts, expecting that he will teach them to the parent—an abnormal and therefore seldom effective method. Yet we can not wait for the development of a new generation of health-educated parents before we look for better health results, and the task before us is to promote a sound system of adult education which may be coordinated with that supplied in the schools. To accomplish this it is necessary to reach the home, directly, with a statement in clear, simple, non-technical language, of the general objectives of health education and the means by which even those least fortunately circumstanced may hope to attain them. As about 90 per cent of the parents of the school children of today—and this estimate is a liberal one—have not gone beyond the eighth grade in school, they possess the vocabulary corresponding to that degree of scholarship, and the information which they are to use must be couched in terms which may be read as easily as is the daily paper. This is a fact too often overlooked in the preparation and dissemination of educational material designed for popular consumption.

The next stage in the search for standards of child health may be found in the day nursery and its newer outgrowth, the nursery school. The day nursery, as it exists in the United States, was based upon the need for a substitute for the mother's care when economic pressure forced her to seek employment during her children's early years. These nurseries have run the entire gamut from those which are totally inadequate in funds, equipment and management to those which, fully realizing the opportunities offered by the care of young children, have, in addition to physical examinations and nutrition work, conducted careful studies of home conditions, mental training, and the possibility of cooperation with the parents. The question is being raised as to the necessity for the continuance of these more or less charitable institutions, in view of the progress being made by the nursery school movement, with its more scientific approach to the problems of childhood, its recognition of the educational importance of the preschool period, and its value in supplying group associations and trained direction of activities by means of a teacher instead of a nurse. The nursery school in the United States, being yet in the experimental stage, has been with few exceptions established and maintained by private resources, for the children of the well-to-do as well as for those of the poor, being intended to supply

an educational need rather than to serve as substitute for the industrially employed mother. The Universities of Columbia (Teachers College), Minnesota, and Iowa have established such schools for the intensive study of the child from two to four years of age. Among the other colleges giving such opportunity may be mentioned Cornell, with a department for training in child care in connection with its nursery school; Yale, where Dr. Arnold Gesell has been conducting his researches for the past six years; and Vassar, which has instituted a course in euthenics for the study of parenthood and the family. The last named gives the following reason for the establishment of this child laboratory:

> The dissatisfaction of women with their educational equipment; the lack of race improvement due to ignorance of the vast amount of knowledge in the fields of psychology, psychiatry, medicine, and the arts of living; the growth of responsibility among liberally educated women for the solution of national problems relating to women and children; and the facts and figures relating to divorce and other disintegrating causes which demand a reform of home life.

Some educators are urging that the education of all children should move out of the home at the age of two or three, but this theory yet remains to be fully demonstrated to the public. The Fisher education bill in England was a stride in this direction, but the necessity for the diversion of the funds into other channels of education has suspended action and there is some consideration now of the expansion of the day nursery as a substitute measure, abolishing its charity aspect, opening it to children of all classes and broadening its scope.

One of the most useful functions of the nursery school, as we have it to-day, is that of stabilizer for the movement for parent education which is sweeping the country by means of child-study groups under various auspices. The child study conferences, called by some of these groups, have drawn to their programs some of the most progressive thinkers and students of modern problems, but a danger very evident to the observer lies in the opportunity they offer for the expression of the newest and most radical theories, interesting and stimulating to fellow students and investigators who realize that what is true to-do may to-morrow be discarded in favor of a newer hypothesis, but often sadly confusing to the parent who is seeking an elementary education based on sounder principles. The nursery school, under the supervision of a trained director who draws to it the parents as students to efface themselves and become mere observers of their children's adaptation to circumstances and each other, is one of the most promising means for parent training.

Another method for establishing health standards is found in the demonstration conducted by a foundation which combines and unifies various protective and educational measures in a practical working program, until such time as the community, being convinced of its

value, takes it over. At present five of these demonstrations are being carried on in the United States, financed entirely by what is known as the Commonwealth Fund, created by a philanthropic woman "for the welfare of mankind." Their purpose is stated to be "to produce and develop practical programs of community and child health which shall serve many communities and develop resources and standards." Two have been placed in cities, one in a town and its county, and two in rural districts. These demonstrations are in effect the establishment of a partnership between the committee in charge and the communities, with the object of translating into effective local action the available knowledge of measures which mean freedom and inspiration for the normal, healthful growth of children of all ages as part of a well-developed health program. It is difficult to condense into the limits of this paper the results of this experiment. Starting with the recognition of the fact that any successful movement must fit the needs of the community, the next consideration is the readiness of the citizens to undertake a particular kind of health service, for it is the citizens who will ultimately determine the permanence of the activity and it must have their approval. Believing that measures which safeguard the individual from danger of infection should be combined with those which build up resistance and give interest in health habits, medical and nursing service go hand in hand with health education and sanitary control in these selected areas. The first steps have been the establishment of a whole-time health department as of prime importance, and the protection of the purity of the milk and water supplies, the disposal of sewage, the immunization against smallpox, diphtheria, and typhoid, and the general control of contacts. In each of the demonstration centers, with the approval of the school authorities, a director of health education has been employed, so that information and training for health may be given as an essential part of education. These messages are brought home to the parents by the children, but, in addition to this means of transmittal, lectures are given to the parent-teacher associations and other civic groups. A health center is established where regular examinations are given by the staff pediatrist to infants and preschool children as well as to the children in the schools. They are heartily approved by the medical men, since they are merely for the purpose of obtaining a general picture of the child's condition for the guidance of nurse, parents, and teacher in developing a wholesome régime of health habits and adjusting home and recreation as may be needed. No definite diagnosis is attempted, but all signs of conditions requiring medical attention are referred to the family physician. The accompanying nursing service, reaching through the health center and the school into the home, is one of the greatest correlating forces in the work. Avoiding the two extremes

of either granting a subsidy to be used at local discretion or of maintaining entire control in the national committee, a sane middle course has been adopted—that of first giving assistance in the enterprises mutually agreed upon as being worth while and acceptable to the community; secondly, the establishment of nondictatorial advisory service; and thirdly, a progressive plan of decrease of outside responsibility in proportion to the development of local support. The test of the increase in this local support has been met in one center by an advance from 0.28 a year per capita for health work to 0.97 and in a rural area from 0.10 to 0.33 per capita. Prenatal care, infant and preschool health have been raised to the maximum, and notable gains have been made on other lines. The success of these attempts at standardization is due to the fidelity with which the foundation has adhered to the meaning of the Latin word "demonstrare"—to show *fully*.

America is to-day in a period of maximum rapidity of change in human habits of getting a living, creating a home, and spending leisure time. Under the pressure of the changes which necessarily bring about friction, delinquency, and maladjustment, the school has been forced to assume an increasing responsibility for making the child the sort of person who can live a useful, happy life in the turmoil in which he finds himself. The education of a generation ago has not fitted the parents to cope with the situation, and a revival to extend back into the home is absolutely essential if the balance is to be preserved, since such demonstrations as those mentioned above are isolated examples, not nation-wide conditions.

A demonstration of a different type was made at the Sesquicentennial Exposition in Philadelphia last summer with excellent results and at an outlay within the reach of the more general public. It was staged by the Children's Bureau to show the scope and value of children's health conferences and the standards which should obtain in their operation.

The purpose was not the hasty examination of great numbers of children—a practice all too common—but the careful examination of a few in accordance with the best methods. Such a demonstration is well within the power of any State or even of a smaller community unit, on somewhat modified lines. The Government erected a children's pavilion which provided a reception room, dressing rooms, and a clinic room, with glass doors and sash windows, so that the public might see the activities without passing through the rooms in which the examinations were being made. The color scheme was most attractive and the simple equipment included white washable furniture, comfortable chairs for waiting parents, a large examination table for the physicians, a measuring board and a baby scale, a floor scale, measuring strips on the walls, a maternity outfit and a complete

layette, and a series of arresting posters. The staff consisted of a doctor, a nurse, and a clerk. Parents entered the pavilion and were received by the nurse, who filled in a record sheet with a full family, personal, and habit history, The mother then went with the child to the dressing room, where his clothes were removed and placed in a marked bag. A canton flannel wrap was put on him. After the nurse had weighed and measured the child and recorded the data, the latter then went to the doctor, both parents usually accompanying him. At the conclusion of the thorough examination, the parents were given a card on which the weight, age, and the height of the child were written, after which they received general instructions as to his diet, care, and habit problems. Other features of the exhibit included a model nursery and a model playground. Three hundred children were studied in this way.

A third method of establishing standards is one which has been carried out with practically no investment of funds mainly by capitalizing the interest of parents in their children and the effect of parent power set in motion. This movement, which has received the whole-hearted support of the United States Bureau of Education and the American Medical Association has been conducted by the Congress of Parents and Teachers under the title of the "Summer round-up of the children," a name derived from the custom upon our great cattle ranches of bringing in before the winter the calves and lambs, to see if they are fit to weather the season. In this movement the closest cooperation is established and maintained with the local health authorities, but the appeal is made to the pride of the parents that their children should be sent to school in the first grade, 100 per cent free from remediable defects. A committee of parents is formed; the list of potential first-grade pupils is secured from the principal; the cooperation of the local doctors, dentists, and nurses is secured; the interest of the press is enlisted; and in May the children are called to the school to which they will go in September for a free examination clinic. Examination blanks, which have been prepared for the round-up by the American Medical Association, are filled out and parents are urged to take their children to their family physicians for the necessary treatment. In cases of poverty the interest of the Red Cross, the Anti-Tuberculosis Association, or some other auxiliary is solicited. Starting in 1925, the second season of this experiment in community health work brought approximately in 42 States 50,000 little boys and girls for examination, and the movement bids fair to spread through the remaining States within the next year. As an example of the need among the great mass of our school children for such "home-made" activity, two instances may be cited: In an Ohio town, which has the distinction of being the birthplace of our Vice President, the first campaign of the round-up, in the summer of 1925,

showed not one child in the seven schools 100 per cent free from defect, but at the end of the season 43 per cent were so reported and Marietta was one of the prize winners. In 1926, thanks to a follow-up campaign by the parents, the campaign opened with 54 per cent of perfect children ready for the first grade, and at the opening of the term in September, 96 per cent were presented as really fit for school.

That there is need of such an effort to meet that of the health authorities was made evident by a group of returns from the 1925 campaign, when 1,139 examination blanks, filled out with sufficient uniformity to offer a good basis of comparison, showed a cross section of 11 States; not of the children from the slums of a great city nor yet those from our remote mountain districts but from the average American home in the Middle West and South. Of these 1,159 children, 75 per cent were suffering from malnutrition, 50 per cent had diseased tonsils and adenoids, and almost 50 per cent had carious teeth. The United States Bureau of Education, through our good friend Doctor Tigert, has urged the cooperation of all school superintendents, and it is hoped that this cooperation of home, school, and community may aid in setting higher the standards of the home. The same plan is now being followed in connection with a safety campaign, and if every school district can attend thus to its own problems we may hope to wake up some morning to find America both safe and sound so far as its children are concerned.

Yet another method has been developed in Canada, so simply, and yet so advantageously, that one wonders that it has not been done long ago. Since 1923, under the auspices of the Child Welfare Association, carrying still further the health center down to the parent, consultations have been held in hospitals, churches, even in the basements of library buildings, in vacant stores, and in schools. In Quebec a French physician, Doctor Turcot, holds a consultation clinic in two rooms of a private house in a neighborhood where there are many babies. The house chosen has at one side an alleyway leading from the street to the back yard of the dwelling, so that baby carriages may easily be wheeled in and parked near the kitchen door. In the kitchen the babies are undressed and the mothers wait their turn to see the doctor, who sits in the adjoining room where the babies are weighed and examined, while the housewife helps the nurse in looking after the mothers and children. There is no difficulty; no ceremony; it is all simple and homelike—and 100 per cent effective. The preschool division of the Pennsylvania Bureau of Child Health is now operating 175 baby clinics where advice and instruction are given as to how to keep the baby well, and within a recent four-week period these clinics were visited by 6,610 children under 6 years of age, of which 700 were infants under 1 year. That health education, when given in terms which people can understand, is welcomed, is beyond

question. A new standard was set in 1926 in regard to diphtheria, as the result of a campaign of education which was actively carried on. The death rate from this scourge of childhood was reduced to 9.5 per 100,000.

The step beyond the clinic is the home visit of the nurse, to which I have previously alluded. These visits are especially important as they give to the nurse visiting the school child the opportunity to observe and offer valuable advice concerning the care of the pre-school children, among whom occur one-third of all the deaths in the United States, ten times as many coming between the years from 1 to 5 as between 5 and 15. One of the greatest contributions which the United States is making in the field of child welfare is this concept of the whole child, a study of him from the standpoints of physical growth, mental growth, social adjustment, and home relationships. Standards for the public-health nurse require that her visits have certain characteristics; they must be purposeful, with a clear reason, and a definite hope of accomplishment. Ability to see another's point of view is also essential in order that the work may be helpful. It must be forceful in the sense that it must present the needs of the child convincingly, and it must be persistent in the face of discouragement.

Going from physical to mental hygiene we meet an increased demand for the presentation of the aims, methods, and principles of the work to parents and the community in general, in order to develop a definite consciousness regarding its value and anything approaching a standard of precept or of practice. The programs developed in both physical and mental hygiene have been widely diversified, and there is little unanimity of thought or uniformity of standard in method, procedure, or organization, though the objectives are well defined and established; the activities more or less successfully carried on. There is need for the public recognition of the strategic position of the schools for this instruction and for the adoption by the school system of a practical and comprehensive program, starting with thorough medical inspection, followed by the installation of a regular course of physical education under a competent director of health education. In no place is the inequality of educational opportunity more noticeable than in this branch of instruction, in which the entire success depends upon the teacher, who sets, or fails to set, the standard, and whose training ranges from the highest efficiency to total inadequacy.

In the United States, 15 of our great national units do not yet require health instruction, 15 have no State directors of health education, and only 25 out of the 49 have mandatory laws for medical inspection. To summarize our national needs, which may be international as well, they are: The establishment of national standards

of health based on a definition of the normal child; a campaign for the education of public opinion to demand and be willing to pay for modern, scientific, practical health education for every child and not merely the favored few; recognition of the danger which comes from both quack doctors and quack parents and a determined and intelligent effort to do away with both these menaces to childhood—the one by extermination and the other by instruction.

We may not rest until we have done these things, if we agree with Secretary Hoover when he says: "Our ideal is not only a child free from disease; it is also a child made free to develop to the utmost his capacity for mental, physical, and social health. This means freedom to grow—the modern idea of education."

## *CHILD WELFARE IN AUSTRALIA*

*By S. H. Smith*

*Director of Education for New South Wales*

In general terms, I may say that Australia realizes the same conditions regarding the health of children as the United States. We have parliamentary appropriations made for the purpose of child welfare. Although these appropriations are not so large as we should like them to be, they are adequate to carry on the work efficiently.

In Australia, the children from the ages of 6 to 15 years are examined. The care of the children from 6 to 14 is vested in th medical branch of the Department of Education. All children who are over the ages 6 to 15 are cared for by the board of public health. The people cooperate with the health institutions for the good of the community. I may say that some attention is given to the things that Mrs. Reeve has just told us about.

In places where the population is scattered, we have health centers where "bush" nurses are stationed. These "bush" nurses render gratuitous service to the mothers and children.

In Australia, every child born entitles the mother, regardless of wealth or station, to a sum of £5 or $25 toward the cost of the child's birth. There seems to be a strong demand for an increase in this amount.

We believe that the circulation of educational pamphlets, which are simply written so that all may understand them, will do a great deal of good.

In connection with the department of public health, we have special branches of each particular field. In this department, we have 19 full-time officers, 19 dentists, 19 dental assistants, and 33 school nurses. Their duty is to look after the general health of our school children.

Every child is given a medical examination during its first year at school. The child is also examined at the age of 14, which is the end of the compulsory age for the education of children. About 120,000 children are medically examined every year. We have no part-time doctors or nurses as in other countries; but everything is done very systematically. The examinations are thorough and information regarding the condition of children is sent to the parents. This is followed by the school nurses.

Generally, a child is medically examined about every three years. If necessary, he is given both mental and physical examinations; free dental or medical treatment.

The schools in Australia give health education. Some of our teachers bring valuable information from America and England, and so far as practicable, we apply this information to our system. With these preliminary remarks, I will present a few statistics.

The effective enrollment of all pupils in public schools was 326,534, and of these, 301,801 were under the age of 14 years.

The comparison between public-school children in New South Wales and those attending State schools in other States of the Commonwealth showed that the Australian-born child of Australian-born parents was a better specimen, according to height and weight, than the child born in Australia of overseas parents, and that the child born in Australia of overseas parents was similarly better than the child from overseas. The British child from overseas is a better specimen usually than the average child of the community remaining in Great Britain.

In comparing the weights of American and Australian children, the average weight of the American boy at each year of age is greater than that of the Australian boy, but the position reverses when girls are compared. In height, both the boy and girl in New South Wales are regarded as taller than American children.

Pre-war figures, comparing New South Wales and Victoria, seem to be practically identical. It was then shown that the boy in the industrial suburb in Australia was a better specimen in height and weight than any other type of boy in England, except those attending the Great Public Schools—a specially favored section of the community. Recent figures collected in New Zealand (1926) show the New Zealand child slightly taller and heavier than the New South Wales child of 1917. However, another investigation is contemplated into our records for 1926.

In general health, the children of New South Wales compare favorably with the several States, but it is difficult to fix satisfactory standards for such a comparison.

The experience, however, of school medical officers who have worked in more than one State points in this direction. Taking the

records of the exemptions from service at the medical examination of senior cadets, New South Wales compares more than favorably with the other States.

New South Wales and Tasmania are the only States which had a state-wide system of school medical inspection and health supervision during the pre-war period, and South Australia is the only other State which, since 1926, can claim such intensive work. Over 100,000 children are medically examined every year in New South Wales, and any remediable defect likely to affect the educational progress or the health development of the child is notified to its parent. A very considerable proportion of these defects are adequately attended to. Eleven traveling dental clinics and two traveling oculists treat defects in children outside the metropolis. School nurses in the metropolis visit the homes and organize treatment.

Excellent work is being done in the infants' schools, both in the city and in Newcastle, to instruct children in good habits conducive to health, and in connection with many of them arrangements are made for the supply of milk at wholesale rates. This is paid for by the parents, and the arrangement as to price is such that a certain amount is available to those children whose parents can not afford to pay. These, are, however, few in number. The whole idea of milk feeding is not to supply the nourishment unobtainable at home, but to demonstrate to parents the unrivaled importance of milk as a food for growing children.

A great deal of attention has been paid to the subject of malnutrition; that is to say, a condition in which a child is not growing satisfactorily as compared with other children of the same age. A certain degree of malnutrition is found in about 10 per cent of city children, but less than 1 per cent are notified to parents because of malnutrition in marked degree. The majority of such cases are undoubtedly due to improper feeding, and are not the result of poverty, but of ignorance as to the real requirements of growing children. This is also intensified by conditions of overcrowding, which result in ill-ventilated bedrooms.

## *HEALTH IN THE SCHOOLS*

*By Lois Randolph*

*State Superintendent of Public Instruction of New Mexico*

In offering these few remarks I want to say in advance that I am especially interested in this line of endeavor because it is grade-school work. My work in the educational field has always been with the grades and principally in the rural schools. Too often at educational conferences all interest seems to center around the high schools, the

colleges, and universities, with but very little thought and discussion devoted to that which is the foundation of any system of modern education—the grade schools. I was interested to hear the delegate from Samoa, Doctor Su'a, speak of the educational work in his country in terms of grade-school work. Also, my neighbor, Señor Novo, of Mexico, as he discussed the educational campaign they are launching in the rural schools of Mexico.

When I saw the topic Doctor Tigert had assigned me for to-day, after a good deal of thought I decided to confine myself to what we are trying to do along the line of health instruction in the schools of New Mexico.

In order that the delegates and representatives from other nations may have some understanding of what we have in the way of an educational problem, I think it would be well to take a moment or two here for an explanation or description of peoples and conditions in New Mexico.

New Mexico's problem has many sides. First, there are the many tribes of Indians, each tribe having its own language and customs. The many different tribes of Pueblo Indians, living near the Rio Grande River, are very different in dress, language, and customs to the nomadic Navajos, famous for blanket weaving, who live in the northwestern part of the State.

The Government of the United States has provided a very efficient system of schools for the Indians, both day schools and boarding schools. Here in these schools "Uncle Sam" is carrying on a very fine line of work in health instruction. Doctors and nurses have these children under observation, and they are taught cleanliness and sanitation and are also instructed and trained in the selection and preparation of food as well as health habits in the home. The Government likewise provides field matrons and nurses for work in the Indian homes, in order that the training of the one may carry over into the other. These nurses and matrons try to teach the Indian mothers how to prepare proper wholesome food, how to feed and care for the babies, how to nurse their sick, keep the homes clean, and any household duties. This type of work is proving to be very effective. So much for the Indian life of New Mexico.

When the United States took over that territory in which the State of New Mexico is located, the inhabitants were, for the most part, Spaniards, descendents of those early Spanish explorers and conquerors. They lived in isolated communities and had been cut off from almost all progress. Even at this time, after all these years of American Government, New Mexico still has many communities that are remote from progress and are very much as they were when they were settled by the Spanish.

In addition to the Indians and the Spanish Americans we have a large number of people from foreign countries. These come to work in our mines and lumber camps. Among these people you will find Italians, Greeks, Slavs, Russians, Austrians, Swiss, Germans, Swedes, Turks, Armenians, Czechoslovakians, Rumanians, Polanders, and Japanese, while from across the border on the south we get many Mexicans.

With a population like this, you can readily see that we shall have many school children in need of special attention. We are handling our health instruction in our schools in this way: Every county has a county nurse, either part or full time, or a health officer, or both. These officials make their regular inspection, and with the aid of the Bureau of Child Welfare, the Department of Education, and the Junior Red Cross, they put on a very systematic course in health instruction. And they so plan the work that it will reach out into the home life.

This instruction is divided into four main parts or phases, as follows:

(1) *A clean body.*—A score card is prepared covering a record of baths, brushing of teeth, etc. In the classroom is daily inspection of teeth, hands, face, neck, and ears. In some counties the county nurse has been able to get little sample bars of soap, sample tubes of tooth paste, and 10-cent tooth brushes for the children. This has been a great help.

(2) *Sanitation in the home.*—Every year the county nurse launches a campaign against flies. The school children are enlisted in this war on the fly nuisance and menace, and are instructed and encouraged in every way to clean up the back yards, barns and outhouses and try to have healthful home surroundings.

(3) *Care of baby.*—This is a very interesting line of instruction and it is intended to instruct the girls so that they may be helpful to the mothers in taking proper care of the children in the home. In my county the nurse has a doll, jointed and life-size. The girls are taught to bathe and dress this doll properly in order that they may help mother take care of baby sister or brother, and incidentally mother may get a few points also. Where there are sewing classes, simple clothing is made for the baby.

(4) *The free clinics.*—The county nurse who is really interested in her work can always get the cooperation of the doctors and dentists and establish a clinic where the children whose parents are unable to pay large fees may have the needed medical attention. Some of the hospitals have been very helpful and generous. All health instruction in the school is given with the thought that the child will carry home the knowledge gained that the family may profit by it.

As has been expressed by so many speakers, the chief difficulty is lack of funds. And then, New Mexico is a large State, fourth in size in the United States, and very sparsely settled. The distances are long between communities, and in the mountainous districts, where the snow fall is heavy, the roads are sometimes impassable for months. Buildings are poor in many districts, equipment meager, and salaries low. But in looking back over my 17 years of school work in New Mexico, I can see that we have moved along in the right direction, and it gives me courage to continue, for as we sing in our State song, it is the "land of the bright mañana."

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*Discussion*

Mr. GOURDON. The protection of the mother and child in France has come as a new voice into social service since the reorganization of the school system in 1881.

Speaking only of the principal things, the protection of the child begins at birth; hence we train the nurses in the care of the infant. One of the most significant factors in the care of the child is something new—the protection of the child against tuberculosis. A professor of the Pasteur Institute has discovered a vaccine which is given at birth to children of tubercular parents. The results have been quite amazing in the last six years. Of all children born of tubercular parents and vaccinated, not one has shown any tendency toward tuberculosis. A law has been recently passed which now makes it obligatory to have all such children of tubercular parents vaccinated at birth.

The care of the preschool child in France is provided for by private agencies organized all over France, which take charge of the distribution of milk to the poorer children. The Government gives to each mother who nurses her own child a monthly pension during the first year of the child's life. During the school years of the child, its health is inspected in every school in every city by doctors belonging to the health department.

The budgets of the largest cities provide for colonies in the mountains or at the sea for underprivileged children. During the vacations these summer school colonies are held in the country for the children of the public schools, and about 10 per cent of all the poorer class of public-school children attend. In the new city-planning work, provision is being made for open-air schools and playgrounds for out-of-door games.

After the child has left school at the age of 13, many private organizations for physical training watch and develop the child during its next years, especially the boys up to army service age. All boys have to serve two years in the army. They enter with a special

certificate of health, or at least the ones who have completed this course in physical training do.

In order to prevent many child maladies, the organization of young girls in motherhood study is obligatory all over France to-day. The girls are taught the science of motherhood in order to do away with the present conditions, and all girls in the primary, superior primary, and secondary schools must take this course.

I should like to tell you how the French Government has applied this particular course in its colonies, and especially Indo-China. In Indo-China the families are very large but in the last century (prior to the coming of the French) the population had not augmented. That was due to the high infant mortality, about one-half of the children dying at birth. In Indo-China before the arrival of the Europeans the natives did not know that cow's milk was fit for human consumption or was good for children. At the age of six months the child began to eat like an adult, although the mother continued to nurse him for three years. This condition, of course, exhausted the mother and many of them became tubercular and contracted tropical diseases. Then children caught these diseases and became sick and emaciated. Because of the superstitions that surround the birth of the child in this country about one-third of those who come into the world are defective.

The majority of the children who go to school in Indo-China are afflicted with some kind of contagious disease—a skin disease, probably eczema. The majority of children have eye trouble, the principal affliction being trachoma. A large per cent become blind. Most of the children are sickly and undernourished because they are too poor to have anything but rice and fish—too poor to add anything else to their diet.

In an attempt to solve some of these problems, the French Government established schools for midwives, and now there are approximately 12,000 Indo-China midwives in the Provinces. In all the Provinces they now have maternity hospitals where the mother may go for the birth of the child and remain for several months after delivery. In Indo-China, where the French have been established the longest, all of the mothers of the middle class now go to the maternity hospitals and never remain in their own homes to give birth to their children.

Bottles have been distributed over the country and information given for the use of condensed milk in feeding. Public nurseries have been established in all the important centers.

In all of the schools they now have medical laboratories where children who have contagious diseases, usually eczema, must undergo

treatment. In order to counteract the spread of trachoma five public centers have been established. In all of the schools canteens have been organized to give the children meat, vegetables, and hot rice.

The result of this education has been that the people of Indo-China themselves are now establishing open-air gardens and nurseries for the children. They have taken over all this work and are only guided by the French Government.

The following statistics will give some idea of the decrease of infant mortality. In 1860 when the French came first to Indo-China, the population was 1,400,000. In 60 years the population has increased to 3,900,000. This surely must be in a large measure due to the efforts of the French Government in its education of the mother and child.

Mr. LIGOT. During the Spanish régime in the Philippine Islands hygiene and sanitation in homes and public places were somewhat neglected. There was no health instruction in the schools. The people were kept in ignorance and consequently their condition became worse and worse. The natives felt that germs and disease were sent by the gods and must be taken care of by nature.

During the American administration public health has improved greatly. There were very few doctors in the past, no doctors in some Provinces, and in some only drug stores and pharmacists. Gradually the eyes of the people were opened in regard to hygienic conditions and to the care of the mother and child.

About 1921 Governor General Wood called a conference of all doctors, nurses, pharmacists, welfare workers, and other civilians to discuss this problem of getting information to the public about the care of the mother and child. Prior to that time there was an organization which provided milk for the children, but there was no such organization as we have now, with officers in different Provinces and doctors and nurses.

In the improvement of the home conditions the work of the welfare worker functions greatly. In every Province instruction may be received by the expectant mother as to the care of herself and her child.

During the great yearly feast, baby contests are held. The babies are weighed and thoroughly examined, and prizes are given for the most perfect babies.

Efforts to improve the care of the mother and children are not limited to social organizations but are promoted and helped by every teacher and every school.

Provinces are divided into districts under supervising teachers. Each district superintendent has a doctor and several nurses to take care of the children who come to school. Before they are admitted to

school, vaccination is required. Other physical defects, if corrective, must be treated.

We are benefiting by any new methods advocated in the United States. We need more doctors and nurses.

Pupils from the seventh grade up to the tenth are given a preliminary course in the care of sick people and children, but this course lasts only six months.

Miss WHANG. Many years ago, perhaps 2,000 years, the Korean mothers had considerable knowledge of child health, and they were efficient in bringing up their children properly. The expectant mothers were shielded from all unwholesome sights and foods. The good traditions of the country went on from generation to generation and have been beneficial in the rearing of healthy children.

Although Korea is a small country and is oftentimes unknown to other people, it has been doing comparatively good work; it has its own traditions which have helped to promote child health. In early times there was not a single defective child in Korea, nor any impure blood.

Now, I will tell you some of the characteristics of Korea. The mothers take great pride in their homes as well as in their country, and the raising of the children is almost entirely in the hands of the mothers, who possess considerable knowledge and ability along these lines. Although they are not modernized by scientific knowledge, nevertheless they are doing well.

The Korean women are very adaptable and quick to grasp new ideas. They do not hesitate to take advantage of any new ideas that seem profitable. They will, I believe, some day play an important part in the affairs of the world.

There are many women's organizations in Korea, such as the Young Women's Christian Association to look after the children and mothers, and recently baby shows have been sponsored to promote child welfare. We of Korea have great hopes of making progress and carrying on this work of promoting child health.

Mr. SU'A. The subject of child welfare is a vital one to Samoa and has played a very important part in the recent development of the islands. The total population of American Samoa has increased over 50 per cent during the last 27 years, or since America took over that portion of the islands.

In early times the Samoans had their medicines and their ideas of health and sanitation, but conditions have immeasurably improved with the coming of the Americans. The naval authorities have restricted the use of the simple native medicines, as some were found to be very injurious to health.

We have four dispensaries in addition to one main hospital in Samoa. These dispensaries are so located that people anywhere can

secure medicine or medical aid. The United States Government has been very active in improving sanitary conditions in the islands. Prospective mothers are encouraged to come to the hospital to give birth to their children, and it has been found that this is a great help in caring for both mother and child during the early period of the child's life.

The doctors are willing to help in the general educational program, and regular inspections are held in the schools every morning, just after roll call. If any child is found to be sick, he is reported at once, and if the doctor is unable to come, the child is sent to the doctor. Some of the most prominent women of Samoa have formed a club called the *Fealofani*, which means "relief union." It has for its aim the improvement of hygiene and sanitation and the promotion of child welfare among the natives. The Government of the United States has encouraged the doctors to make regular and systematic inspections, and as a result the sanitary conditions in the villages have improved greatly and the villages now appear very clean.

Doctor APPLETON. I speak as a children's specialist and as one who has worked in Pacific countries—on the mainland, in China, and in Hawaii. The many problems need to be discussed in just such a meeting as this.

We need standards of two sorts—one for what we do and another for the goal at which we aim.

The main objectives of the work in Hawaii are the child health centers, where parents bring their children to be weighed and examined by a physician, or a nursing program is carried on there. Children brought to these centers are examined and advice given. No treatment is given. These centers are for the education of the parents in the care of their own particular children, not in competition but as individuals.

We have 66 such centers outside of Honolulu, but they are conducted on a small basis. In the past rural work has not been done well. It is done now partly by cooperating with other people. The plantations are excellently organized, so we go to the manager or plantation doctor if we wish work accomplished along sanitary lines.

We use any building for these centers—public schoolhouses, porches of homes, in stores by the roadside, Japanese schoolhouses, and in one instance in the social hall of a Hawaiian church (the best way to get in touch with the many Hawaiian families of that district). In this way we do not have to pay rent.

Our equipment is simple; we take it along with us. People are our most important equipment. Our portable scales are set up any place and the weighing and examining is done. By going from place to place we get a larger per cent of the children. Last year we got

into these health centers 22 per cent of all the babies born. On one island where all conditions are favorable and the centers well supported by public opinion, we got 50 per cent of all the babies born on that island in that center. This year the appropriation is less but the work is increasing more and more.

The doctors who help us are not all specialists. We need everybody but we must get the help of the doctors. Doctors soon understand just what sort of examination we want given. We must set up our own standards of what we are going to do by selecting the essentials and discarding the nonessentials. The standards usually published by one section or country are standards of averages. Standards of one race do not apply to another race in a different location or to the same race in a different location.

I have made a very thorough comparison of the children in China and the Chinese children in Hawaii. The curves of growth in China and Hawaii of pure Chinese children are totally different. Curves of those here are similar to those of European children and American children than those of Chinese children.

In Hawaii the conditions are very favorable to child life. We have a tropical climate but no tropical diseases. In Hawaii the infant mortality of the Caucasians is as low or lower than in New Zealand.

Many distinctions taken as racial are not racial but are due to environment alone.

Miss WITHINGTON. The aim of the Institute of International Relations is to bring American ideals to foreign mothers. We have five secretaries of different races who visit the mothers of their respective races and endeavor to give them instruction in the more modern conceptions of sanitation, hygiene, and kindred subjects.

Because we found it difficult to persuade the mothers of the various races to visit our headquarters, we were forced to devise some other means of getting knowledge to them. Accordingly we decided upon the plan of having a "little house on wheels," which has attained considerable prominence both here and in Washington. This little house is fully equipped with every modern convenience of a small home, and is towed about to different sections, where the mothers are given instruction in the more modern methods of household management and child care. We cooperate with Palama settlement in this work.

Doctor MURAKAMI. The problems of child health receive a great deal of attention in Japan. There are various boards which compile and distribute pamphlets to the different schools free of charge, in an effort to further the cause of improved health for children and mothers. The health question in the Provinces is receiving special attention. The factory law in Japan provides that proper care shall be

given to mothers and prospective mothers, and this is of great importance as it carries the work among the poorer classes. Maternity hospitals are established in all the larger cities, and these take care of a great many cases.

The conditions in Japan are somewhat similar to those M. Gourdon mentioned in Indo-China, in that the Japanese have very large families. But the Japanese mothers, and fathers as well, take the best care that they are able, and will do anything for the benefit of their children.

As a consequence of the improved conditions in child health and care of the mothers, infant mortality decreased from 18.9 per cent in 1918 to 16.6 per cent in 1920; 16.3 per cent in 1923; 15.6 per cent in 1924; and 14.2 per cent in 1925.

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After the discussion had closed, the general chairman, Commissioner Tigert, appointed a committee, consisting of Mrs. A. H. Reeve, Dr. N. Murakami, and W. F. Kennedy, to report on the deliberations of the education section. He suggested that the report be ready for consideration at the afternoon session, in order that any action taken by the section might be submitted to the committee on resolutions for presentation at the closing plenary session.

Adjournment.

## *Thursday Afternoon, April 14, 1927*

*Topic: "Standards of Child Life." Subtopic: "Free Education and Compulsory Attendance"*

*Henri Gourdon, of France, Presiding, Assisted by W. F. Bond, State Superintendent of Education of Mississippi*

The session was called to order by the chairman at 2 o'clock.

Mr. Gourdon took occasion to thank the delegates for the privilege of presiding at the conference. He spoke of the friendly relations existing between the people of France and of the United States. He referred to the many times that the two Republics have worked together for the advancement of common ideals, and expressed the hope that they would continue to do so in the future.

### *STANDARDS OF CHILD LIFE THAT SHOULD BE MAINTAINED*

*By W. F. Bond*

*State Superintendent of Public Instruction of Mississippi*

In the United States the Federal Government functions in education through a Bureau of Education in the Department of the Interior.

This bureau does not attempt in any way whatever to control or regulate education in the States. It merely helps us whenever we need help, and does educational research work.

The United States Government has made grants of land to the States for the establishment of certain institutions, and in several States there are land-grant colleges.

Section 16 (640 acres) is reserved in every township for the support of education. The principal derived from the sale of these lands can not be spent; only the interest can be used.

The Federal Government helps to finance the program of vocational education and civilian rehabilitation. This work is going very satisfactorily indeed.

As no attempt is made by the Federal Government to control education in the States, they have to work out their own educational systems. In every State there is at the head of the educational system a superintendent or commissioner. In some States he is chosen by a board and in other States he is elected by the direct vote of the people. His term of office varies from two to four years. In Mississippi, it is two years; in New Mexico, two years; in Utah, four years. In some States, in which the superintendent is elected by a board, he serves for a longer term of years than the foregoing.

The educable age varies in the different States. In my own State, it is from 5 to 21 years. In some States, it is from 6 to 21; in others, it is from 7 to 19 years. It is used, in some States, in reckoning the school appropriation.

The school term varies also—in some it is 10 months; in others it runs for 12 months. The average term is 9 months. The general vacation is in the summer time. In the poorer counties of a few States, the term is still only 6 or 7 months, but outside of the South it is not less than 9 months.

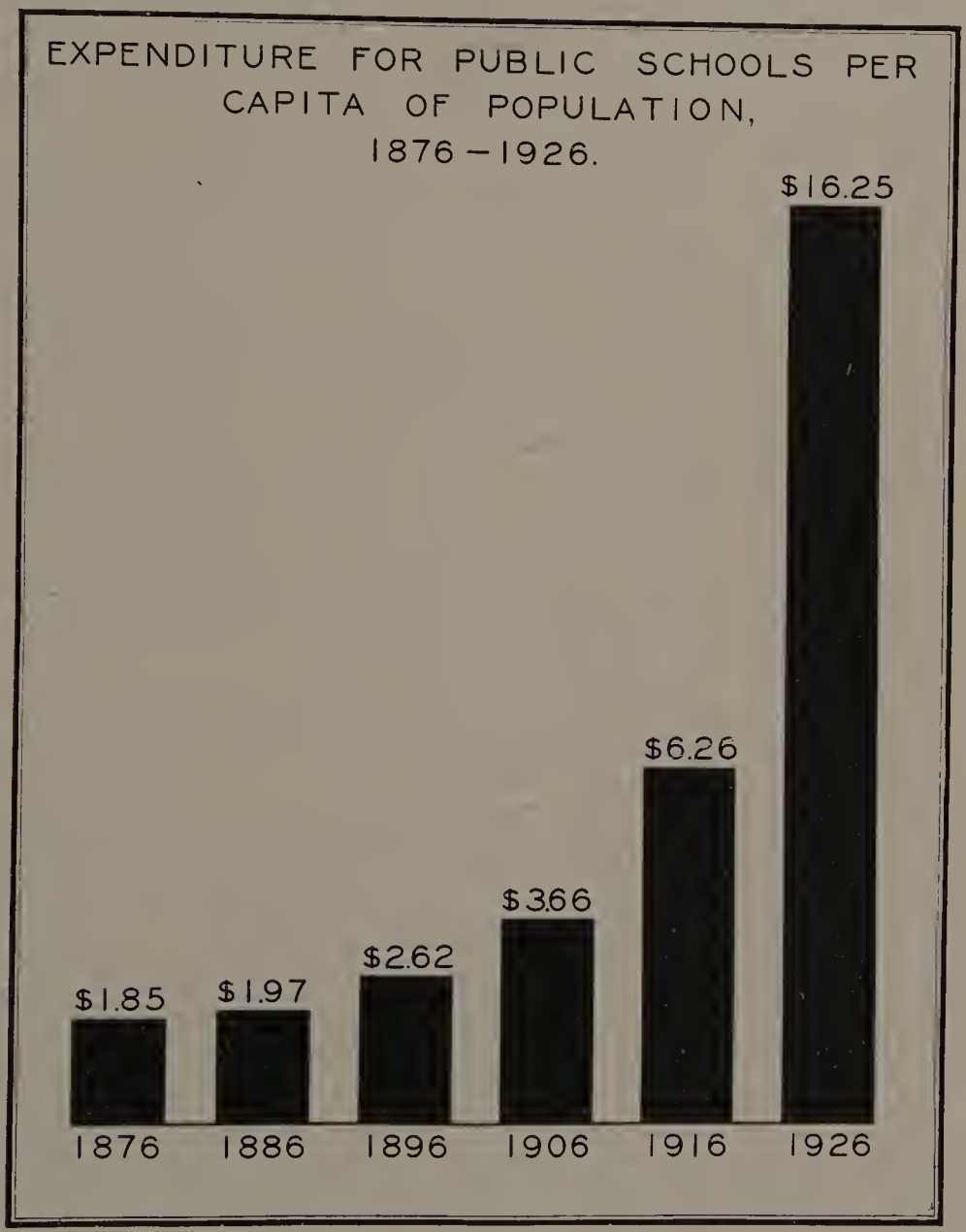
The public schools are financed by the State and county governments and by the local districts. In some of these, there are limitations as to the appropriations. A year ago, we had 22,000,000 children in the schools, and it takes $22,500,000,000 annually to maintain them.

Some parents do not appreciate the value of education for their children, so some States have compulsory attendance laws. The compulsory age varies in different States; in some States, the children are required to go to school until they have finished the elementary school; in others, until they have finished high school. The tendency is to limit the compulsory age to the end of the elementary grades.

Having provided at tremendous cost free public schools for the children in all of the States, and having passed laws requiring that the children attend these schools, the next question we ask is, What kind of standards shall we set up for the children in our schools? What is it all for? Why this great expense? Why do we spend more than half of the appropriation in some States for education? The purpose of it all is to make good citizens. We believe that by maintaining good schools we can make good citizens; people who can live the highest and best life socially, industrially, religiously, and economically.

In my opinion, and I hope I am mistaken, we have failed in this in a larger way than we know. For ourselves as educators and for the children in our public schools we are not setting up those standards that make for the greatest general good. Again, I say, the purpose of it all is to make good citizens; but who is the good citizen?

Of course, the good citizen is one who has a fund of organized knowledge, who has made a certain degree of educational advancement. I feel that there are other things more fundamental than the mere accumulation of knowledge. One great criticism of education in the States is that we have mistaken the means for the end. In my




opinion, a good citizen is honest. We should so operate the schools as to cause the boys and girls to become fundamentally honest. I had far rather my own children were fundamentally honest but ignorant, than dishonest and know everything in books.

Honesty is fundamental in the life of the citizen; it is fundamental in the life of the community; it is fundamental in the life of the

Nation, and without it I can not see how any people can make substantial progress. If we had honesty between nations to-day there would be less war, less misunderstanding and rumors of war.

I think that we should so teach as to cause our boys and girls to be industrious. The lazy citizen is no good. We want the people who come up from the public schools to be industrious; to help carry on the work of the world; and an industrious people are generally a happy people and a prosperous people.

Then again, we should hold up a very high standard of health. The great World War revealed that one-third of our young men were unfit to fight. I am afraid that our teachers in the States do not realize that good health instruction is just as important as instruction in any other line.

The home is having a hard time to-day. In our country the home has become a place where we merely eat and sleep irregularly. I think that the good citizen is one who loves. I believe that our teaching should be such as to cause our children to love the home, the father and mother, and have respect for older people. The child who honors his father and mother is very likely to become a good citizen. The school should teach the children to love the State, to love the Nation, and to love the peoples of all the nations of the earth.

I think the good citizen honors the God of his fathers, and I believe that no people can be a great people that is not fundamentally religious, that does not honor the God of nations.

These in brief, it seems to me, are some of the standards that we should hold up for ourselves in dealing with the child life of the nations of the earth.

We find three things interfering, to a certain extent, with our work in trying to carry out these standards in the public schools. First of these is the lack of home training. I am sorry that the home in the States is failing in its duty. One-half the children who enter the public schools have not had the home training they should have had.

The fact that 75 per cent of the criminals are under 25 years of age can not and must not be laid at the door of the schools. The home is more responsible than the schools.

Another great hindrance is a certain class of moving pictures. I am told that an even worse class go from the United States to foreign lands. [Mr. Bond asked if any of the delegates knew whether this statement was true. Hon. S. H. Smith said that they may go but that they are not admitted.] In some States the low class of moving pictures is barred, and in my opinion pictures showing disregard for the marriage relation, portraying crime and violations of the law as romantic adventures are positively hurtful. There are certain classes of moving pictures in the United States which hinder our efforts to hold up right standards.

It is a fact that certain newspapers feature crime and the sensational things that happen to the few rather than the virtues and the good deeds of the many. Editors say that a paper is to furnish news. Parents and teachers should teach the children not to regard these things as news. I wish public sentiment would demand that more of the good deeds which are so much in abundance on every hand should be more prominently featured and less of the sensational and bad published. If I had formed my opinion from what I had read in the papers and heard from friends, I should have expected to see the representatives from England wearing monocles and acting as if they were snobs. Instead, I find my friend from Australia to be a regular "Uncle Bim." If I had believed the papers I should have expected to see the Hawaiian women all wearing grass skirts and dancing under the coconut trees. If I had believed the papers I should have expected to see cannibals from Samoa, wild men from the Philippines, and backward representatives from China, but contrary to such reports I have found the delegates from these countries to be among the most intelligent men we have at the conference. I have been much impressed with the fine character of the men and women from these lands.

## *FREE EDUCATION AND COMPULSORY ATTENDANCE IN JAPAN*

*By N. Murakami*

*Director of the Tokyo Academy of Music, Tokyo, Japan*

Elementary education in Japan is now free and attendance compulsory, but it has taken a long time to reach this state.

In 1872 a law was promulgated known as the "system of learning." In this system particular stress was laid upon primary school education, with the recognition that this must be the foundation for all subsequent education.

For the purpose of promoting effective and widespread elementary education, the entire country of Japan was divided into 53,760 districts, each district to found and support one primary school. These schools were to inaugurate a schedule of study to be divided into two grades of four years each—the inferior grade and the superior grade. Each four-year grade was in turn subdivided into eight terms of six months each. Children from 6 to 9 years of age were taught in the inferior grade, and those from the ages of 10 to 13 in the superior grade.

The districts founding the primary schools were intended, according to this earliest law, to support their own institutions, but as many of the districts were unable to bear the entire expense the central

Government gave financial help in many cases. Tuition fees were charged also, to assist in maintenance. This fee was 50 sen (approximately 25 cents in American currency) per pupil per month, but in cases where there were two pupils from the same family the fee was only half that per pupil, and if there were more than two no further charge was made. In other words, the fee never exceeded 50 sen per family.

After a period of experiment it was found that this new system, based on European and American models, had not been well adapted to Japan's needs. It was too idealistic, or at least unpractical, for the state of Japan at that time. Consequently a new educational ordinance was promulgated in 1879.

According to the provisions of this new ordinance each village, town, or city was obliged to establish a primary school. This provided more schools than did the earlier system of districting. In case, however, small villages were not large enough to need one school, or were unable to afford the expense of supporting one school for each, a group of villages were permitted to establish a consolidated school for their combined communities.

School age was fixed at the ages of 6 to 14 years. Those persons exercising parental authority were required to send all their children within this fixed school age for at least 16 months of primary instruction. This was the small beginning of compulsory education in Japan.

The primary schools were to give an eight-year course, which might be shortened according to the local needs, but never to fall below the number of four years. The course was to consist of elementary, middle, and higher divisions, the first two named to be of three years' duration each, the latter of two years, making the eight years in all.

These regulations persisted until the year 1886, when a new primary school law was enacted to meet changing needs. Under this revised system primary education was divided into two sections, elementary and higher. Parents were required to send their children of school age to school until the elementary course of four years was completed. This was quite a step forward in the direction of compulsory education. The parents were required to pay a tuition fee to help maintain the expense of the school, the amount of the fee to be determined by the provincial government, differing according to the conditions in the various Provinces. In cases where the support of the school could not be met entirely by these accumulated tuition fees, the deficit was defrayed by the local communities and by private contributions.

Four years later a further revision was made in the primary system. Of the two divisions of the system the "ordinary" or elementary course might include from three to four years, and the higher two,

three, or four years, according to local conditions. The village communities were obliged to bear the expense of maintenance and parents were to pay tuition fees. The children of the poor were exempt from payment of fees, and reductions were made in the case of many children from one family, but still the fee was somewhat of a burden. Although the provincial governments gave a certain amount of subsidy, expense began to outrun income, and the tuition fees were gradually raised until they operated as a great discouragement to school attendance.

Owing to such a state of affairs the Imperial Diet received many petitions from the various parts of the country, asking that the central Government give more aids to relieve the situation. In response to these petitions the Government in 1892 enacted a law providing for the granting of subsidies toward paying the salaries of primary-school teachers. In 1900, regulations were made rendering four years of primary study obligatory. And as attendance thus became compulsory, the system of tuition fees was abolished altogether for this period.

In 1907 the period of compulsory attendance was prolonged from four to six years. The need for this had been long felt, but heretofore the Government had limited itself to encouraging the higher two-year course as a sort of postgraduate to the required four years. But as the need began to be more strongly felt, especially following the Russo-Japanese War, these new regulations for prolonging compulsory education were made.

At the same time, the course in the higher primary school was fixed at two years, which could if necessary be prolonged to three.

With the prolongation of the term of compulsory primary education, the cost of such education began to increase, and the burden upon villages and towns, in spite of Government subsidies, began to be increasingly felt. In 1913, a committee on education, appointed by the Minister of Education, passed a resolution calling for an increase in Government subsidies, the increase to be made gradually, step by step, until such subsidies should amount to one-half the total sum of teachers' salaries throughout the country. This was the committee's recommendation, but it was not until 1918 that a law providing for the defraying of the expenses of compulsory education by the central Government passed the Diet and 10,000,000 yen were appropriated. Since that time the sum has been from time to time increased until now it amounts to 65,000,000 yen.

The number of primary schools in Japan in 1923 was 13,301, offering a six-year ordinary course; 12,072 schools combining ordinary and higher courses; and 209 higher primary schools, making a sum total of 25,582 schools.

In 1923 the number of children of school age was 9,233,091, and the number of children attending school 9,168,891, giving a percentage of attendance of 99.3.

The need for still further prolongation of compulsory education has been felt for many years, and the demand from various quarters for its immediate putting into force has been great. Eight years of compulsory attendance are considered desirable, as the next step. It is believed that the Government will present such a bill before long.

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## *EDUCATION IN CHOSEN*

*By S. Oda*

*Of the Keijo Imperial University, Korea*

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Korean education of old centered in the study of Confucianism, and had as its ultimate goal the making of public servants. Pupils first entered the Sohtang, a private establishment, somewhat similar to the ancient "dame school," found in every town and village, and there they were taught to read and write Chinese ideographs. For a more advanced course they went to the Han-gyo, or public higher school, established in every district, after which they proceeded to the Sekin-kan at Keijo, the highest seat of learning in the country. Graduates from this institution sat for the civil-service examination, and successful candidates were eligible for official positions for all time. This system prospered for centuries, but on its abolition in 1894 these old schools continued in name only, with the exception of the Sohtang, which still carried on as before. In 1895 the Korean Government, following the advice and example of Japan, introduced a new educational system and founded elementary schools throughout the country as well as a few higher schools in Keijo, capital city of Chosen, but these failed to bring about gratifying results owing to insufficiency of the right men for eaching and management. About this time there came into being many private schools, most of which were maintained by foreign Christian missionaries as part of their mission work, and by the year 1905 the number of such schools had increased considerably.

On the advent of the protectorate régime in 1906 steps were taken to reform the existing system, laying particular stress upon elementary education, and this was mainly effected through the agency of Japanese educationists. After annexation public education in the country was established on modern lines in conformity with the principles set forth in the Imperial Rescript on Education. Its essential

principles are very similar to those of Confucianism, and year by year new schools were started to keep pace with the increased desire of Koreans in general for education. While the system in Chosen is similar to that in Japan, the difference in language and customs of the two peoples has necessitated division of the schools into two kinds, as far as elementary instruction is concerned, one for Koreans and the other for Japanese. However, the course of study, qualifications of graduates, and connection with higher schools are now quite the same in both cases. At present, as educational organs, elementary and secondary, for Koreans there are common schools, higher common schools, and girls' higher common schools, and for Japanese, primary schools, middle schools, and girls' high schools. For the coeducation of both races there are industrial schools, normal schools, professional schools, and university.

*Reforms in educational system.*— Following the annexation an educational ordinance and its pertinent regulations were promulgated in 1911 to secure a sound educational system for Chosen. These were framed very simply and were practical in scope to meet the mental and social conditions of the people at the time. But the passage of 10 years wrought so remarkable a change in every aspect of Korean life that the system fell far behind the actual needs of the country. Consequently, in 1920, a special committee was organized to study what reforms could be made in the system in force, and by it definite plans for reform were evolved in 1921, and these served as the basis for the formation of a new educational ordinance which was issued in 1922. By the new ordinance not only were more educational facilities provided but the educational standard of Koreans was raised on the principle that they should be afforded equal opportunity under one and the same system as the Japanese.

Elementary education in the country is not compulsory as it is in Japan. Though it is still given in institutions separately established for Koreans and Japanese, the rules governing them with reference to period of study, entrance qualifications, subjects of study, hours of instruction per week, etc., are essentially the same, the only points of difference being—

(1) The Korean language is made an obligatory subject for a school for Koreans, while it is optional in a school for Japanese.

(2) The teaching of Korean history and geography is particularly emphasized in a school for Koreans.

(3) Different textbooks may be used in view of the difference in language and customs of the two peoples. For instance, a school for Japanese children may use textbooks compiled by the educational department in Japan, and a school for Korean children may use those compiled by the Chosen administration.

(4) The period of study in a Korean common school is six years as a rule, though it may be shortened to five or four under special conditions. A higher or supplementary course of two years may be attached to this school.

(5) A public primary school for Japanese is founded and maintained by a local school association, and a public common school for Koreans by the school-expenditure body of a municipality or district.

In drawing up the scheme for common education the establishment of separate schools for Koreans and Japanese was still maintained, but the new ordinance provides for converse admission by the two schools of children in certain circumstances, so that Korean pupils may be admitted to a public school for Japanese, and vice versa. This method was already in vogue in a measure as a matter of expediency, and at present a large number of Korean pupils are availing themselves of this provision.

The cultivation of a national and individual character is of paramount importance for any people, so the new régime demands in the education of the young that they shall be taught to respect the ancient virtues and traditions, to develop a sound and loyal spirit, and, above all, to cherish the idea of brotherhood and service, and good citizenship of high moral character.

*Elementary and secondary education.*—Establishment of common schools for Koreans was started in 1906, the first year of the protectorate régime, and at the time of annexation (1910) they numbered 100 altogether, including 40 private schools of good standing. After annexation, their number increased annually by leaps and bounds, and the year 1919 saw a total of 482 throughout the land. At present the total number of common schools, including Government, public, and private, is 1,336. For the secondary education there are 2 higher common schools in Keijo and 1 in each local center, the total being 15. Besides these, 9 similar schools are maintained by individuals or juridical persons, and for the secondary education of Korean girls there are 3 public and 9 private schools.

The first public school for primary education of Japanese in Chosen was founded as early as 1877, and this was followed by the establishment of similar schools in Keijo and a dozen other towns in which Japanese were more or less numerous. The number of schools grew rapidly after the introduction of the protectorate régime until it reached 54 in 1908. At the beginning of the present régime some 120 schools were in existence, but the steady increase in them has brought their number up to 435, and their total including Government, public, and private schools at present reaches 453. As secondary educational organs there are now 11 middle schools and 22 girls' high schools.

All these schools, either Korean or Japanese, stand for general culture, and their period of study is five years for boys and four or five years for girls. The total of these secondary schools, including public and private, at present numbers 69.

*Vocational and professional education.*—Not many years have elapsed since the beginning of industrial education in Chosen, though a few schools for it were started during the protectorate period, but these were rather poorly conducted owing to their very slender means. Since annexation, however, the authorities, paying ever greater regard to Korean industrial training, have done much toward diffusion of it by making increase or improvement in such schools, and feeling that nothing was more essential for the Koreans than cultivation of the habit of industry and economy, in which they were generally lacking, caused the work of these schools to be so arranged that the practical and not the theoretical side of it received foremost attention. This idea was most strongly accentuated in agricultural schools, and though at the beginning pupils as well as their parents showed much distaste at the insistence on practical work, they gradually became reconciled to it under the personal guidance of their teachers, and came to realize that there is dignity in manual labor.

At present the industrial schools comprise 22 agricultural, 2 sericultural, 19 commercial, 1 commercial-technical, 4 fishery, and 29 elementary industrial, all maintained as public institutions except for 4 private commercial ones. In addition, there are an agricultural-forestry school and a polytechnic school maintained at State expense.

For professional education there are the law college, medical college, higher technical school, higher agricultural-dendrological school, higher commercial school, and 5 private institutions of like character.

A university preparatory school was opened in April, 1924. The period of study is two years, having two courses, literary and scientific, and the entrance qualification is completion of the full five-year course of a middle school or a higher common school. The Imperial University itself was opened in April, 1926, with graduates of the preparatory course as nucleus. At present it comprises law and literature, and medical colleges.

*Normal education.*—Until quite recently no regular normal schools were established, their place being taken by teachers' training courses specially attached to Government secondary schools to meet the growing demand for teachers, but these failing to keep pace with the rapid expansion in primary education, a Government normal school was started in Keijo in 1921, with a five-year general and a one-year special course. In the course of succeeding years a public normal school was founded in each Province, and they now total 13.

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In the following table comparison is made of the educational organs existing at the time of annexation and those of to-day:

| Institutions | End of May, 1911 | | End of May, 1926 | | Increase and decrease |
|---|---|---|---|---|---|
| | Schools | Students | Schools | Students | |
| Primary schools | 128 | 15,509 | 453 | 57,019 | 4 times.[1] |
| Common schools | 172 | 20,121 | 1,342 | 441,954 | 8 times.[1] |
| Middle schools | 1 | 205 | 11 | 5,022 | 11 times.[1] |
| Higher common schools | 5 | 819 | 24 | 11,069 | 5 times.[1] |
| Girls' high schools | 3 | 515 | 22 | 6,532 | 8 times.[1] |
| Girls' higher common schools | 2 | 394 | 12 | 2,630 | 6 times.[1] |
| Elementary industrial schools | 3 | 93 | 29 | 1,553 | 10 times.[1] |
| Industrial schools | 20 | 961 | 48 | 9,089 | 2 times.[1] |
| Professional schools | 5 | 409 | 10 | 1,877 | 2 times.[1] |
| Unclassified private schools | 1,667 | 71,763 | 614 | 63,726 | 3 times.[2] |
| Normal schools | | | 14 | 1,663 | 14 times.[1] |
| University preparatory schools | | | 1 | 328 | |
| University | | | 1 | 147 | |
| Total | 2,006 | 110,789 | 2,581 | 602,609 | |
| Sohtang | | | 18,510 | 121,900 | |
| Kindergarten | 6 | 606 | 57 | 3,829 | |

[1] Increase [2] Decrease

*School curriculum.*—The curricula of the schools vary, of course, according to the kind of school—common, industrial, commercial, higher common, and so on. The standard curriculum of a common school having a six-year course is as follows:

Morals: 1 hour a week for the whole course, on the essential points of morals.

National language: 10 hours a week for the first year, 12 for the second, third, and fourth, 9 for the fifth and sixth.

Korean language: 4 hours a week for the first and second year, 3 for the rest of the course.

Arithmetic: A progressive course leading up to vulgar fractions, percentage, and the use of the abacus; 5 hours a week during the first two years, 6 in the third and fourth, 4 in the fifth and sixth.

Japanese history: 2 hours a week in the fifth and sixth years.

Geography: 2 hours a week in the last two years.

Natural science: 2 hours a week in the last three years.

Drawing: 1 hour a week in the fourth year, and 2 hours for boys and 3 for girls in the fifth and sixth years.

Singing: 1 hour a week throughout the course.

Gymnastics, drill, and sports: Varies for boys and for girls, averages about 2 hours a week throughout the course.

Sewing: 2 hours in the fourth year, and 3 hours in the fifth and sixth.

Manual work: In the first, second, and third year manual work is taught 1 hour per week, and in the fourth and fifth year 2 hours.

Extra curriculum: According to local circumstances agricultural, commercial, and industrial training may be given electively; 1 or 2

hours a week in the fifth and sixth year, and in the fourth year in the case of a common school with a four-year course.

*Administration and supervision.*—At the head of the administration of education is the chief of the educational bureau in the general Government. Under him are three sectional heads, educational textbook compiling, and religious (including affairs of investigation and museum of historical remains), and five or six school inspectors whose duty it is to supervise all the educational organs in the peninsula. In each provincial government there is an educational section, the head of which, assisted by two or three school inspectors, supervises the local elementary and secondary schools.

*Cost of education.*—The personnel and office expenses for educational administration are incorporated in the expenditure of the central and local offices of the General Government, and are met by the State treasury. Apart from the items referred to above, the educational expenditure is met by the General Government, and by three classes of public corporations, viz, provincial bodies, district educational expenditure bodies, and local school associations.

The General Government supports its own institutions—ranging from the Imperial University to elementary schools. In addition, it grants educational subsidies to local bodies, meets the expense of compiling textbooks, of sending students to Japan, and of giving short courses of instruction for various special objects.

Provincial bodies support normal schools, industrial schools, and secondary schools. They subsidize the educational work of other local bodies, and meet the cost of various kinds of social and educational encouragement. Their sources of revenue are local taxes, subsidies from the General Government, receipts from the Imperial donation fund, properties, fees, contributions, provincial loans, and some minor sources.

District educational bodies meet the expenses of common schools, which are primarily for Koreans. Their sources of revenue are assessments on Koreans, subsidies from the provincial government receipts from properties, fees, contributions, district loans, and some minor sources.

School associations meet the expenses of elementary, secondary, and industrial schools established primarily for Japanese. Their revenue is derived from assessments on Japanese, and from sources similar to those drawn on by the district educational expenditure bodies.

The following table gives the total expenditure for education in Chosen for the fiscal year 1924–25 and for the year 1913–14, as a basis of comparison. The figures, however, do not include the cost of the personnel and office management of the educational administration in the central and local governments, which is met by the State treasury out of general revenue.

*Public expenditure for education*

| | 1913–14 | 1924–25 |
|---|---|---|
| Government, general: | | |
| Direct | 550,000 | 2,500,000 |
| Subsidies | (686,000) | (4,300,000) |
| Provincial bodies: | | |
| Direct | 428,000 | 5,000,000 |
| Subsidies | (269,000) | (3,000,000) |
| District educational expenditure bodies: Direct | 1,157,000 | 14,000,000 |
| Local school associations: Direct | 555,000 | 5,000,000 |
| Total[1] | 2,691,000 | 26,800,000 |

[1] The open figures represent the direct expenditure on education by the indicated agencies; the figures in parentheses represent grants in aid (subsidies) made by the indicated agency to agencies subsidiary to it. All the subsidies become, of course, direct expenditure as they go down the line. The total expenditure of the year, therefore, is the sum of the open figures in the columns.

## *FREE EDUCATION AND COMPULSORY ATTENDANCE*

*By Will C. Crawford*

*Superintendent of Public Instruction, Territory of Hawaii*

Free education is based on two very fundamental principles of society. The first is equal opportunity for all, according to their ability, and the second is the guaranty to society that a sufficient number of its members will be trained to carry on the professional responsibilities of government.

The United States, since its earliest days, has recognized some duty toward free education. The Colonies established schools with two purposes in mind. There was the necessity of giving all children a general training in the elementary subjects (the so-called "three R's") and, secondly, there was the need of training young men for the ministery and other professions.

Free education has been carried to great lengths in the United States. At the present time schools are maintained by public funds, which provide free instruction in nurseries, kindergartens, elementary and secondary schools, universities for technical and professional training, and many other special types of schools for special groups These schools may carry children from the time they are 3 years of age until they become of legal age at 21.

Free education was estabilished in Hawaii long before these islands became a part of the United States. This education began in 1823 and was, of course, very primitive. Its origin was unusual and may be of interest. The high chiefs, with their immediate attendants, were the first pupils. Each chief sent the most proficient scholars in his retinue to his different lands as teachers, with a notice to his tenants to attend school. The eagerness of the people to acquire the novel and wonderful arts of reading and writing was intense and

almost the whole population of both sexes and all ages went to school. These primitive schools, at the time of their highest prosperity, reached the number of 900 and were attended by 52,000 pupils, mostly adults.

It was a remarkable instance of a body of despotic chiefs exerting themselves for the education of their subjects, just emerging from barbarism. The methods of teaching were of the rudest kind and little was taught beyond reading, writing, arithmetic, and geography. The head man of each village was ordered by his chief to provide a house, food, and clothing for the teacher.

In 1831 the American missionaries established the first real schools. These were modeled after the best practices in American schools, and since that time, through the days of the monarchy, the Republic and the Territory of the United States, free education has been offered to all children in Hawaii through a complete system of American public schools.

*Compulsory attendance.*—If free education was to function satisfactorily, it was soon found in America that the attendance of pupils must be made compulsory. While this was generally accepted as a fact, it was a long time before satisfactory State laws were passed in its support. Massachusetts enacted the first compulsory attendance law in 1852, but it was a very weak affair. It applied to children from 8 to 14 and compelled them to attend for 12 weeks each year. In 1867 Vermont followed the lead of Massachusetts and in 1871 New Hampshire, Michigan, and Washington Territory adopted compulsory attendance. From that time on compulsory attendance spread rapidly over the whole United States until, to-day every State has some period of compulsory school attendance.

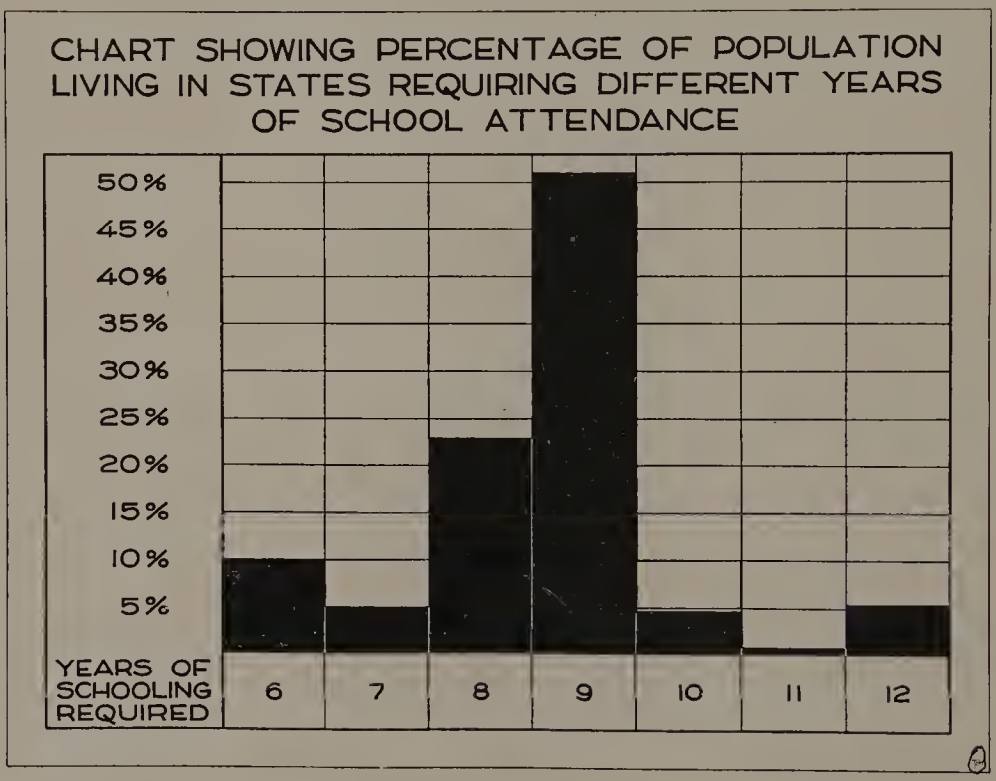
In this respect Hawaii can rank ahead of the United States, for compulsory attendance was enacted by the King in council in 1841 for children from 4 to 14, and school agents were appointed for each island to see that schools were established and made available for all children. This compulsory age was later changed to include children from 6 to 14, inclusive. A regular 12-year course of study was adopted, including 8 years in the grammar schools and 4 years in high schools. The courses were patterned after the best schools in the United States, and in the early California days it was no uncommon thing for prominent American families in California to send their children to the boarding schools of Hawaii.

Three necessary corollaries of compulsory attendance are: (1) Length of school year, (2) compulsory age limits, and (3) exemptions.

1. The length of the school year has developed from the 12 weeks in the original Massachusetts law to an average of about 100 school days. It runs all the way from a minimum of about 60 days to a

maximum of almost 200. In Hawaii the school year is 180 days, which is above the average on the mainland of the United States.

2. The compulsory age is set by the individual States and varies at both the beginning and closing years. Some States start the program at 6 years, while others delay to 8 or 9 years. Generally speaking, universal school attendance begins at 6 years of age. At the other end of the program, some States release children at 12, while others hold them until they are 21. The average is 16 years. Hawaii's law compels attendance from 6 to 14 years, inclusive.




3. Exemptions from compulsory school attendance are usually granted under some or all of the following conditions:

(*a*) Completion of a certain course of study. In Hawaii this exemption is made at the completion of the 8 years of grammar school. In many States the requirement is graduation from the high school.

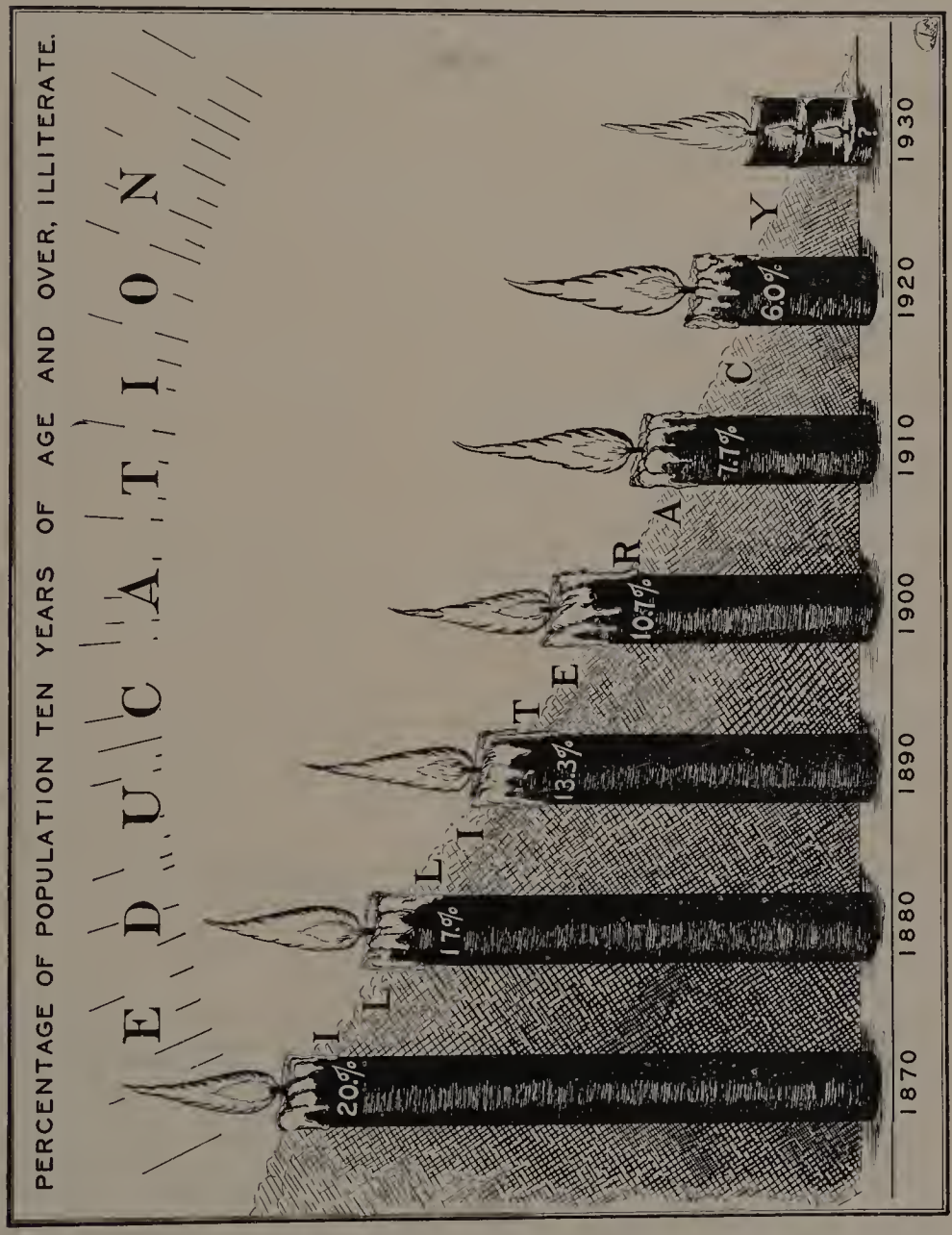
(*b*) Distance from public school. This varies considerably. In Hawaii the specified distance is 4 miles, unless suitable transportation is provided by the Territory.

(*c*) When a satisfactory substitute for the public school is made by attendance at an accredited private school or the employment of a competent tutor.

(*d*) When the child is physically or mentally unable to attend school. This fact must usually be substantiated by a physician's certificate.

(*e*) Special exemptions such as the parents' need for the child at home, or by order from a juvenile court.

The principal obstacles to compulsary attendance are usually found in the carelessness and ignorance of the parent and in indus-




trial conditions. Fortunately, in Hawaii the great majority of the parents are anxious for their children to attend school, so there is not so much difficulty in getting universal attendance,

Child labor is the greatest obstacle to compulsory education. Most States have remedied this situation by passing child labor laws

which prohibit children from entering regular industry during the year of school attendance. These are very necessary in order that universal education may be safeguarded. Hawaii has such laws and the local industries and plantations are very careful in the enforcement of the statutes.

With free education offered and compulsory attendance required, the State, then, has the final obligation to see that the school is efficient. It should have as its aim at least five things:

(1) *Health.*—Each child should have a strong, clean body, with the training that will help him to keep fit.

(2) *Knowledge.*—A familiarity with facts and an ability to perform the fundamental human processes in modern society is a birthright of every child.

(3) *Economic independence.*—Every child should be trained so that he can learn a profession or occupation and enter society as a self-respecting, self-supporting member.

(4) *Culture.*—Every child should be exposed to literature, science, and the arts of civilization, so that he may live a complete and independent life.

(5) *Citizenship.*—Every child should be trained to work and to adjust himself to others in his community. He should be trained to accept his responsibility for the protection and advancement of his community.

The schools of Hawaii have these aims and we are all working together to develop true citizens of this Territory, who will do their part in advancing civilization here in the Pacific.

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Following Mr. Crawford's address four young Hawaiian teachers sang a number of songs in the Hawaiian language.

### *Discussion*

Mr. Ligot. Concerning this subtopic I have but few words to say. We have in the Philippine Islands free education and noncompulsory attendance. I do not believe that there is any need to compel the children to attend school. I know personally that all children love school. They cry and it causes them great disappointment if they are not allowed to obtain an education.

The Philippine Legislature never thought of enacting laws compelling children to attend school. Children are increasing every year in such a way that the school funds can not meet sometimes the demands of schools. The school funds come from insular govern-

ment, provincial government, and municipal government; yet voluntary contributions from the people are sometimes needed.

Parents in their eagerness to have their children educated, particularly those who live in the barrios, donate school sites and build wooden schoolhouses or with mixed materials and supply them with proper school benches. This does not mean that the Government has neglected to build schoolhouses in the barrios, as there are to be found concrete school buildings erected in many barrios with insular and municipal school funds.

Free education is being given in the Philippine Islands. Compulsory attendance is not necessary, except in the mountain provinces and regions of non-Christian tribes which are governed by special laws.

Mr. DIZON. At the beginning of the American occupation in the Philippines there was compulsory education. I recall an incident of my boyhood when I ran away to the river, being chased by a policeman, and taken back to school. Now the schools are so popular that children cry to go to them. Six-tenths of the children of school age are in school. In 1919 the legislature in the Philippines appropriated 30,000,000 pesos for education, but that was not enough. Every school is overflowing and we can not build schools fast enough to accommodate all the children.

Colonel WEEKS. In 1900 I was a member of the United States army of occupation in the Philippines and was named superintendent of public instruction of three important Provinces of North Luzon. I was subordinate to Dean Worcester, who was in charge of public instruction in the Philippines, He sent me 17 tons of school supplies, which I distributed to 44 towns in the three Provinces in Northern Luzon. They went to 88 schools. The girls and boys were sent to separate schools. The children studied the catechism principally, but one or two learned to repeat the arithmetic.

Twelve years later I visited Palo Juan, on the island of Mindoro, on a hunting trip. I saw a little boy without any clothes bathing in the river. I asked him in Spanish why he was not at school. He replied in English that it was vacation. Surprised to hear him speak such good English, I asked him where he had learned to speak English. He said that he belonged to an English club and that every time one of its members spoke in his native dialect he had to pay a fine of 25 cents. The fund thus collected was used to build and equip their schoolhouse, and they have a fine concrete building. This is an example of the progress in the Philippines as I see it.

Mr. JENSEN. Until very recent years school people felt that their obligation to the pupil was discharged when he was given a fair or full opportunity to pursue the prescribed course of study. The

course of study was made for all; all were expected to pursue it and understand it. If for any cause the pupil failed to understand the course that was his misfortune, not the fault of the teacher. The meal was prepared; those who did not like it or were unable to assimilate it might suffer the consequences.

During very recent years it has dawned on school people here and there that, after all, failure on the part of the young person to achieve success in school may not rest altogether with the pupil. We are beginning to feel that there may be some inadequacy on our own part as well as on the part of the pupil. We are coming to believe that the content of the traditional curriculum and the long-established methods of procedure may apply to everyone no more adequately than exactly the same kind of food and service may satisfy the appetites and serve the needs of all.

Efforts are now being made to serve as fully as possible not only that proportion of the school population that have right along mastered the required course of instruction, but also to serve that proportion that have as steadily and consistently failed to do so. It appears that as a profession we are coming to the point where we shall clearly see that the responsibility for warding off so many schoolroom failures rests with the teacher as well as with the pupil, and that to do our part in fulfilling the purposes of a Government such as ours, it is in reality our duty to devise ways and means of educating all the children of all the people.

In Utah the consciousness of this responsibility became intensified soon after the enactment of our 1919 part time and compulsory attendance laws. These laws provide that all children up to 18 years of age without a high-school education who are not employed shall attend school, and that those without a high-school education who are employed shall attend part-time schools for at least 144 hours during the school year.

The immediate effect of this law was not the establishment of many part-time schools. It was, however, a greatly increased attendance in the regular schools, especially in the night schools as the following table shows. It is not assumed, however, that the increase of enrollment shown by this table is altogether due to the ushering in and enforcement of these new laws. Such an assumption would disregard the widespread if not universal increase in school attendance, especially in the high schools and colleges. Everywhere high-school enrollment has been greatly increased since the World War. Likewise during this period an unprecedented increase in enrollment has taken place in the colleges throughout the country.

*School population and total school enrollment in elementary and high schools, together with percentage of increase for each year from 1914 to 1924*

| Year | School population 6 to 18 | Per cent of increase over previous year | Total enrolled full time | Per cent of increase over previous year | Enrollment 1 to 8 grades | Per cent of increase over previous year | Enrollment 9 to 12 grades | Per cent of increase over previous year | Number enrolled under 6 and over 18 | Number enrolled part time |
|---|---|---|---|---|---|---|---|---|---|---|
| 1914–15 | 121,411 | 2.9 | 105,383 | ------- | 96,656 | ------- | 8,727 | ------- | ------- | ------- |
| 1915–16 | 124,945 | 2.9 | 108,359 | 1.8 | 99,074 | 2.5 | 9,285 | 6.4 | ------- | ------- |
| 1916–17 | 128,344 | 2.7 | 109,292 | .9 | 99,255 | .2 | 10,037 | 8.1 | ------- | ------- |
| 1917–18 | 132,424 | 3.2 | 110,193 | .8 | 100,152 | .9 | 10,041 | .0 | ------- | ------- |
| 1918–19 | 134,887 | 1.8 | 109,449 | .7 | 99,089 | 1.1 | 10,360 | 3.2 | ------- | ------- |
| 1919–20 | 128,846 | 4.5 | 117,406 | 7.3 | 103,276 | 4.2 | 14,130 | 36.4 | 2,873 | 3,135 |
| 1920–21 | 130,468 | 1.3 | 119,034 | 1.4 | 102,627 | .6 | 16,407 | 16.1 | 2,671 | 1,865 |
| 1921–22 | 130,863 | .3 | 123,427 | 3.7 | 104,320 | 1.6 | 19,107 | 16.4 | 3,736 | 1,654 |
| 1922–23 | 132,438 | 1.2 | 127,024 | 2.9 | 105,512 | 1.1 | 21,512 | 12.6 | 4,189 | 1,437 |
| 1923–24 | 137,650 | 3.1 | 130,296 | 2.4 | 106,988 | 1.4 | 23,308 | 8.3 | 4,184 | 1,498 |

By means of effective enforcement of the new laws the schools were under the necessity of providing instruction for large numbers of that proportion of the school population that theretofore had dropped out of school as well as for that large and new group of young people between the ages of 16 and 18 years. As time went on it became more and more apparent that not all of these recruited students could or would carry on the regular work of the school. In some cases their mental ability did not permit of it. In other cases their inclinations or needs were not at all intimately related to the work prescribed. However, they were now in the schoolroom to be educated; hence it became an urgent necessity to provide for activities which would immediately enable them to function in the life of the school and fit them later to become desirable and useful members of society. Either this or a less rigid enforcement of the new law.

By far the greater part of the increased enrollment fitted into the established order of things. The established courses apparently were suited to the needs and abilities of a large proportion of the school population that had discontinued attendance in their teens. The extended life of the school population and the compulsory attendance laws gave unquestioned evidence that all along young people had been dropping out of school for trivial causes, but these changes in the law and in our practice also gave evidence that the schools were not well prepared to care for those whose dispositions, abilities, and needs did not or would not permit them to respond to the traditional curriculum, to the usual classifications, and to the procedures found in the schoolroom.

It is now eight years since the laws referred to were passed. Much of the effort so far put forth to fulfill the purposes of these laws has of necessity been somewhat experimental. Employment other than

for brief periods of the year has not been available for many of the students who might have been benefited by employment and part-time education; hence it seemed logical—perhaps it seemed necessary—for the increased numbers of students to find their plaees in the regular classes and programs of the schools. At any rate this appeared to be the least difficult solution of the problem. It has been found, however, that this plan can not be put into successful operation, at least over an extended number of years.

The pressure for full-time attendance in regular schools became uncomfortable in a number of respects. As already intimated a good many of the pupils had no taste nor aptitude for the regular work. Compulsion therefore often resulted in resentment. The other pupils of the school were more or less disturbed by the attitude of the unadjusted group.

It has been found necessary not only to provide special activities for the unadjusted pupils but also to provide special teachers. Experienee has already shown that teachers with other major responsibilities can not successfully care for these young people who need special guidance and instruction. Since 1924 special teachers in the majority of our communities have been selected for this special work. Since that time the work has constituted practically their entire responsibility to the school. The duty of these special teaehers consists not merely in imparting instruction; it consists also in ascertaining as fully as possible a knowledge of their pupils through a study of various factors, including the pupils' history and environment. These special teachers are in reality teacher coordinators. They work in the home and the field as well as in the school. In the fall they are most active in child accounting and attendance enforcement; in the winter in teaching their speeial classes; and in the spring in visiting homes. Throughout the entire year, however, they keep in close touch with the home to understand more fully their problem cases and to gain the sympathetic and intelligent cooperation of parents and guardians.

So far as possible the young people are placed in homogeneous groups and given work suited to their tastes, needs, and eapacities. A large part of them are found in the practical arts courses during part of the day. The teachers find frequent occasion to sit down with their groups and talk over every-day oecurrences and problems, help interpret questions having social and economic signifieanee, and discuss important events of general significance and application as they are brought to public attention through the press and other agencies.

This kind of training, while less classieal and orthodox than that of the traditional curriculum, seems to be neeessary. It is funetional and no doubt valuable also. It is devoid of the rigidity of the traditional eourse of study. It is more appealing to the pupils' interests.

While the work is largely along practical lines, at the same time it is such as to develop not only skills but also a breadth and culture not commonly found among young people deprived of school training.

While it seems evident that all the children of all the people should be educated where the rule of all governs the welfare and destiny of the Nation, yet it has not been established as to what age it may be possible or prudent to compel all young people to attend school. Out of our experience so far with the 18-year-old compulsory law there have come evidences that such compulsory attendance should not apply to all, if full-time attendance and regular school work are to be undertaken. On the educational side there appear to be inability and pronounced lack of desire on the part of many pupils to carry on regular work; on the economic side there is a question as to whether so large a part of the population should be kept from productive activity, both from the standpoint of general prosperity and from the standpoint of withholding experiences in actual life situations outside of the school until after the age of 18 years is reached. Without elaboration on this point we feel justified in withholding unqualified approval of compulsory full-time education for all children until they have reached 18 years. After three or four years of attempts to usher practically all of the pupils into regular schools and regular programs of instruction, it has been found necessary to establish part-time classes, to provide special types of training for a considerable part of the young people between the ages of 16 and 18 years, and to cooperate with parents and guardians and also employers in providing suitable part-time labor.

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The chairmen of the three committees who had been appointed by Commissioner Tigert to bring in resolutions covering each day's discussions were asked at this time to submit their reports. These were received and after discussion were referred to the resolutions committee, with the unanimous recommendation of the Education Section that they be approved by the conference and made a part of its recommendations.

Commissioner Tigert thanked the delegates for their attendance at the sessions of the Education Section. He said that he had been warned that in Hawaii conferences were likely to start with enthusiasm but to dwindle in regard to attendance after the first session. Events in this conference had proved quite the contrary. Interest had been not only sustained but had increased from session to session, with the result that the last session was the largest attended of any.

He then declared the section adjourned, to meet with the other sections in plenary session on Saturday morning April 16.

# *RECLAMATION SECTION*

*General Chairman, Elwood Mead, Commissioner, United States Bureau of Reclamation*

*Secretary, Hugh A. Brown*

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## *PROGRAM*

Reclamation methods and policies of the countries gathered in the conference were given first place on the program of the Reclamation Section. Second in order were the contributions which different countries could make to our knowledge of special features of reclamation. In order to give each of these features adequate place, one-half of the sessions was devoted to round-table conferences and one-half to the presentation of prepared papers. The sessions of the Reclamation Section were held in the Moana Hotel, Honolulu.

*Monday, April 11, 2 p. m.*

Topic: Government aims and methods in reclamation.

Opening address: Elwood Mead, Commissioner, Bureau of Reclamation, United States of America, "The policies and problems of Federal reclamation."

Address: William Cattanach, chairman State Rivers and Water Supply Commission, Victoria, Australia, "Conservation and use of water."

Address: Nils Olsen, Assistant Chief, Bureau of Agricultural Economics, United States Department of Agriculture, "Land-settlement policies and their relation to the development of a prosperous agriculture in the United States."

Round-table discussion.

*Tuesday, April 12, 9 a. m.*

Topic: Government aims and methods in reclamation (continued).

Address: José Mares, National Commission of Irrigation, Mexico, "Irrigation projects and some problems connected with reclamation."

Address: Frederick Krauss, University of Hawaii, "Difficulties of settlers: Aid and direction which should be given."

Address: E. J. T. Manchester, president Water Supply Board, Brisbane, Queensland, Australia, "Proposals for the settlement of reclamation projects."

*2 p. m.*—Round-table discussion.

*Wednesday, April 13, 9 a. m.*

Topic: Special features of reclamation.

Address: K. Kachi, expert, Ministry of Agriculture and Forestry, Japan, "Land improvement and reclamation in Japan."

Address: C. C. Teague, president California Fruit Exchange, "Cooperative organizations for the marketing of products from irrigated areas."

Address: A. C. Hardison, director American Farm Bureau Federation, "The financing and operation of a cooperative rural community."

*Wednesday, April 13, 2 p. m.*

Round-table discussion.

*8 p. m.*—Motion pictures illustrating irrigation and reclamation in Australia and Mexico, accompanied by explanatory talks by Mr. Cattanach and Mr. Mares, respectively, at Mission Memorial Hall.

*Thursday, April 14, 9 a. m.*

Topic: Land-settlement problems.

Address: E. Torres Belon, Member of Congress and engineer in reclamation work, Lima, Peru, "Policy of Peru in irrigation, autocolonization, and colonization of the country in the last six years."

Address: Thomas H. Hunt, professor of agriculture, University of California, "The achievements of a private land-settlement colony: A report of progress."

Address: Rev. Akaiko Akana, member Hawaiian Homes Commission, "The experience of the Hawaiian Homes Commission in carrying out its work."

Address: Gershon Agronsky, director of information of the Palestine Zionist Executive, Jerusalem, "Jewish reclamation in Palestine."

Address: Marshall Dana, editor Journal, Portland Oreg., "Problems of State and district reclamation."

*2 p. m.*—Round-table discussion.

*Suggested topics*

1. The appropriate fields of public and private development in reclamation.

2. Conditions under which government should undertake reclamation of privately owned lands, and methods which should be followed.

3. Factors which affect the value of water in irrigation and the maximum yearly outlay for water which irrigators can afford to make.

4. Where government constructs irrigation works, which is to be preferred—building the works by day labor or building by contract?

5. Devices for the measurement of water.

6. Losses of water from canals in distribution.

7. The settlement of land:

(*a*) Qualifications of settlers in the way of capital and experience.

(*b*) Time of payment for land and water.

(*c*) Advice and direction to be given.

(*d*) Extent of financial advances which are feasible and the methods by which they should be supervised.

NOTE.—The following papers were presented to the Reclamation Section in the absence of the writers:

T. Ikeda, chief engineer for water supply, Korea, "Rice-increase program in Chosen."

Chao Phya Baladele, Minister of Lands and Agriculture, Siam, "Reclamation and irrigation in Siam."

53180—27——15

# *PROCEEDINGS*

## *Monday Afternoon, April 11, 1927*

*Topic: "Government Aims and Methods in Reclamation"*

*Elwood Mead, Presiding*

The session was called to order at 2 o'clock by the chairman.

## *POLICIES AND PROBLEMS OF FEDERAL RECLAMATION*

*By Elwood Mead*

*Commissioner, Bureau of Reclamation, U. S. A.*

It is believed that this conference can reach a better understanding of the problems of reclamation and of the methods by which obstacles are being overcome and success achieved if our discussions deal largely with its human and economic factors.

Engineering methods are standardized much as they are in railroad building. A description of the works built or building, although valuable, will not, it is believed, have the same educational influence as a discussion of why irrigation works are being constructed, how deserts are being changed into cultivated fields, and what are the human and economic results to governments and peoples.

In accordance with this view, I have elected to explain the causes which led the Federal Government of the United States to make the reclamation of arid land a national policy and the changes in ideas and methods which are the outcome of 24 years' experience.

Irrigation in the United States is practically confined to the western third of the country, where rainfall is too scanty or uncertain to enable profitable crops to be grown without its aid.

In its beginning reclamation by irrigation was left to private enterprise. The location of ditches and the use of water went on without comprehensive plans or public oversight. It required little money and less engineering to turn the water of tributary streams over the low-lying bottom lands. But when these favorable opportunities

had been utilized and larger and costlier works were required the efforts of individuals or that of the people of a locality would not answer.

Irrigation corporations were formed to build works from the proceeds of the sale of stocks and bonds. Their plans and operations were as a rule confined to building works to supply water. In some cases they included the subdivision and sale of the land to be irrigated, but in no case was provision made for helping these settlers improve their farms. The costly and difficult work of clearing and leveling land, of building houses, and saturating the thirsty soil was left to the maiden efforts of the farmers.



ARROWROCK DAM, BOISE PROJECT, IDAHO

The task in too many cases was beyond their means or endurance. So many had to give up, farm development was so slow, and construction payments so meager that many worthy private projects were bankrupt before irrigated farming had a chance to demonstrate its value. In time it became evident that some new agency had to be enlisted. The Federal Government was chosen because it was best fitted to deal with interstate streams and had the reserve of resources needed to carry out large enterprises.

In order to secure funds for construction, the Government adopted the expedient of using the revenues obtained from the sale of public lands, which at the outset of Federal reclamation amounted to several million dollars a year. Under the reclamation act passed in 1902, the settlers under Government works were required to pay for

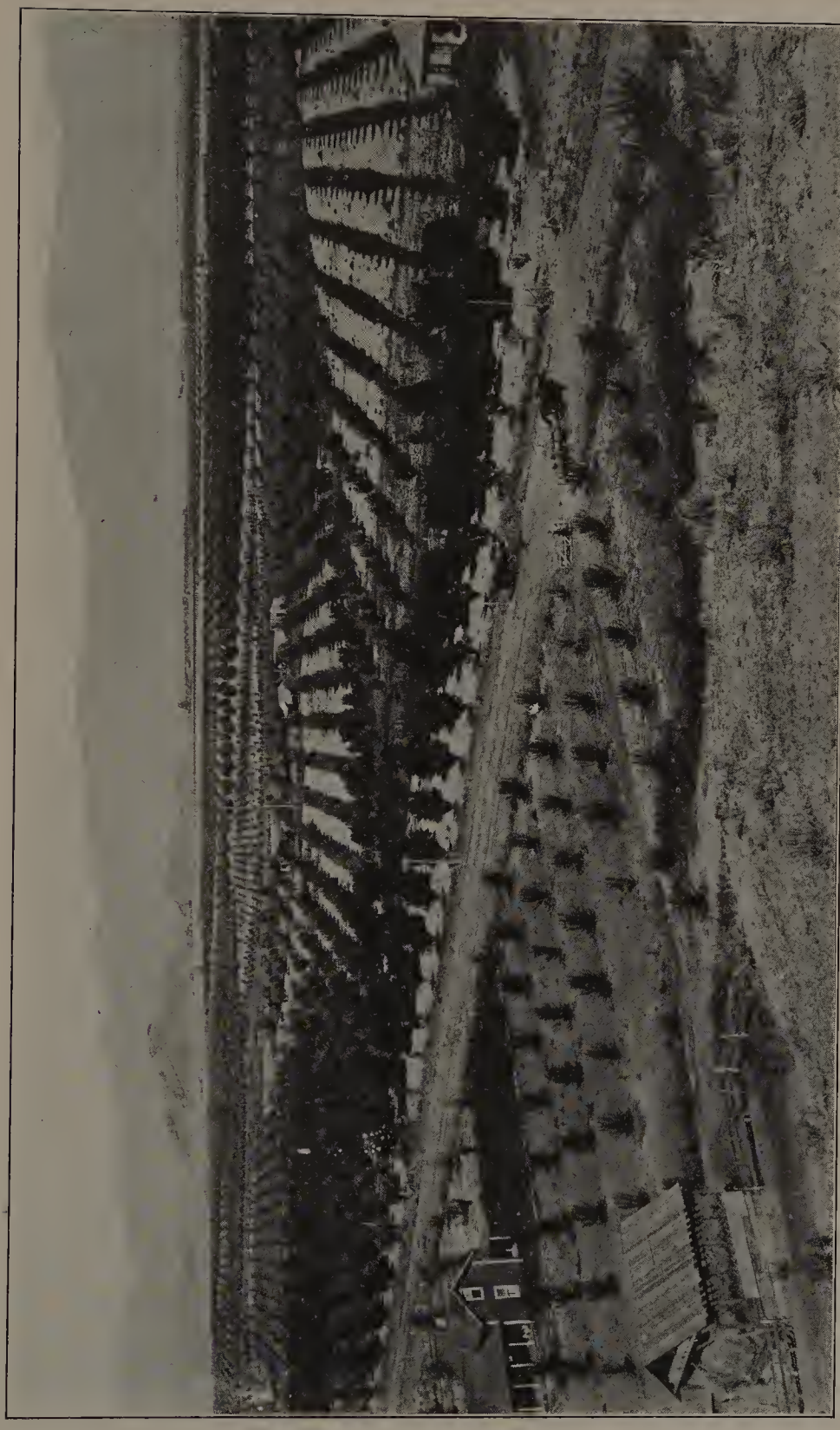
them without interest in 10 years. Thus the entire amount invested would in that time be returned to the fund, to be used again in the construction of other works. In addition to these payments the fund was to be augmented by yearly income from land sales. The belief at the outset was that this fund would soon grow into a large sum.

Foregoing interest on repayments of construction did not therefore seem to be an important matter. On the contrary, the fear was expressed that the fund would become too large and lead to unwise and unnecessary undertakings.

These happy financial results were not realized, largely because no provision was made in the original act to aid the settler in changing the uncleared, unleveled land into farms. The necessity for such assistance was not realized. Settlers on land that did not need irrigation had been able, without aid or direction, to settle the public domain and create permanent prosperous homes. It was thought that this process could be repeated in the arid region, if canals were built and water made available. The hardships to settlers' families and the cost of living while they were engaged in the hard and unproductive work of clearing off sagebrush, smoothing off the inequalities in the surface of their fields, building houses, and buying equipment for their farms were not realized. Nor was it realized how greatly many settlers who come from humid sections would be handicapped by lack of knowledge of irrigation methods and how much time and money would be wasted by beginners working without proper tools or expert advice.

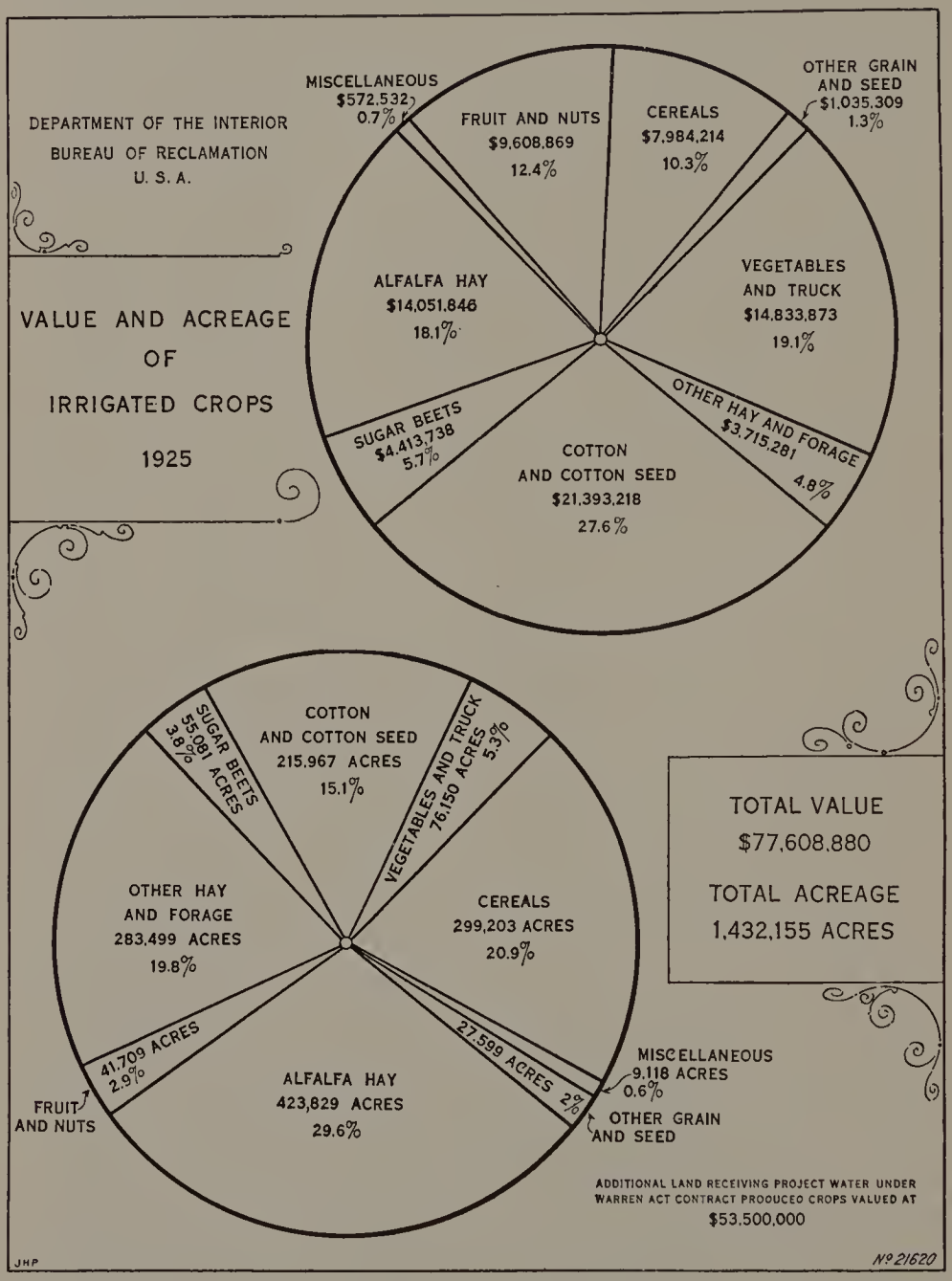
The optimistic view of settlers' capacity to learn a new art and overcome serious obstacles was not justified by subsequent experience. Settlers found that in many instances it cost as much to change raw land into a farm as it did to build canals for its irrigation, and since this change had to be made before a settler could have an income which would enable him to live and meet his payments to the Government, the development of farms became the greatest problem of reclamation. Where a settler had to borrow money he usually had to pay very high rates of interest, and too often he could not obtain a loan on any terms. The result was that many settlers wasted years of effort, with only a small part of their farms in condition for cultivation, unable to use their time to best advantage or to get the income necessary to meet payments to the Government.

*Remedial legislation.*—The first reclamation act was passed in 1902. By 1914 delay in settling and improving farms had caused the actual revenues to fall short of what had been estimated. The money obtained from water and land sales would not enable works being constructed to be completed in a reasonable time.



YOUNG APPLE ORCHARDS ON THE OKANOGAN PROJECT, WASHINGTON

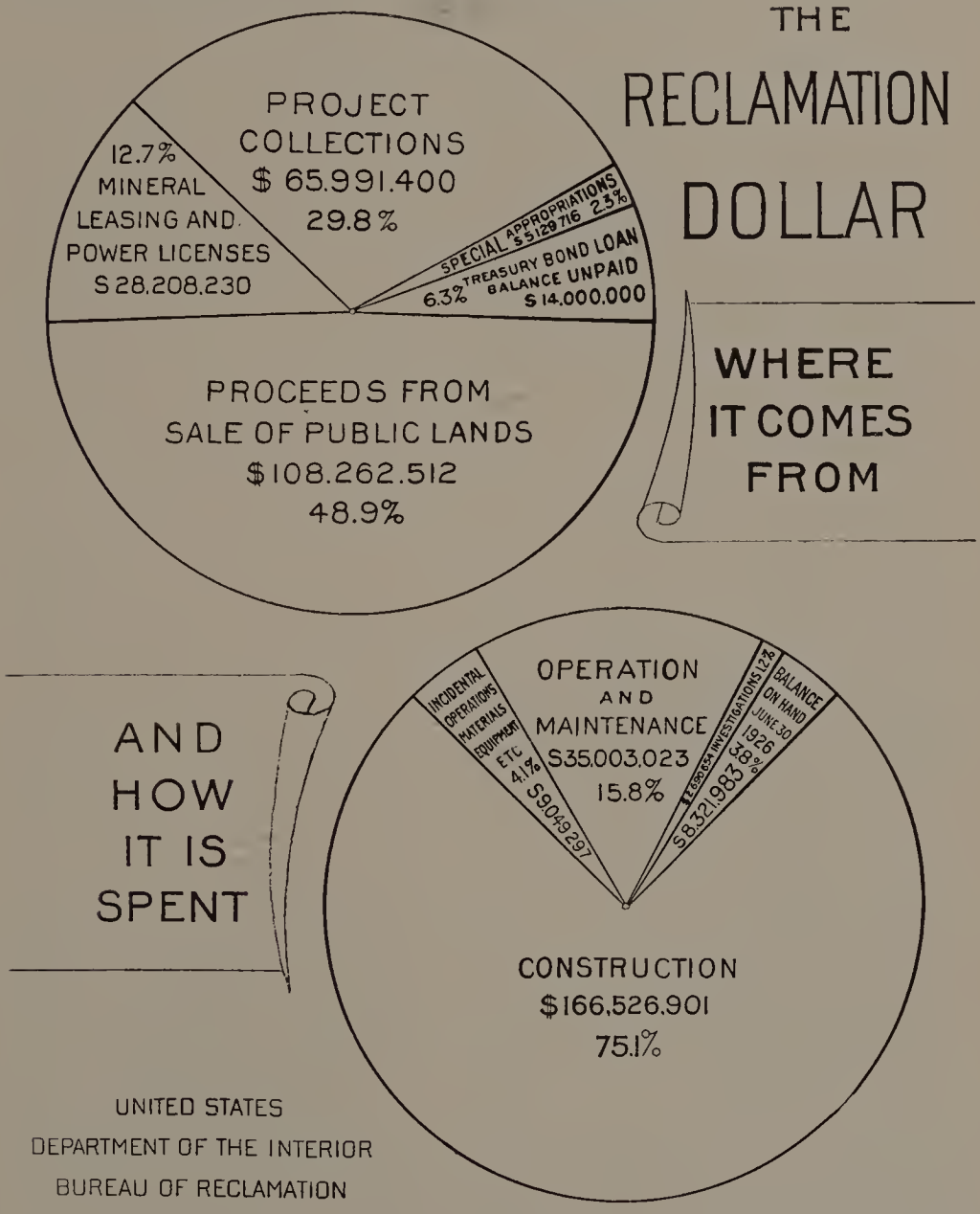
Accordingly, a loan of $20,000,000 was made by Congress to the reclamation fund. This loan was to be repaid at the rate of $1,000,000 a year, out of the income to the fund. These payments have been made as agreed upon.




It also became evident that settlers could not, within 10 years from the time they took up unimproved land, complete the payments for water, and the payment period was extended to 20 years.

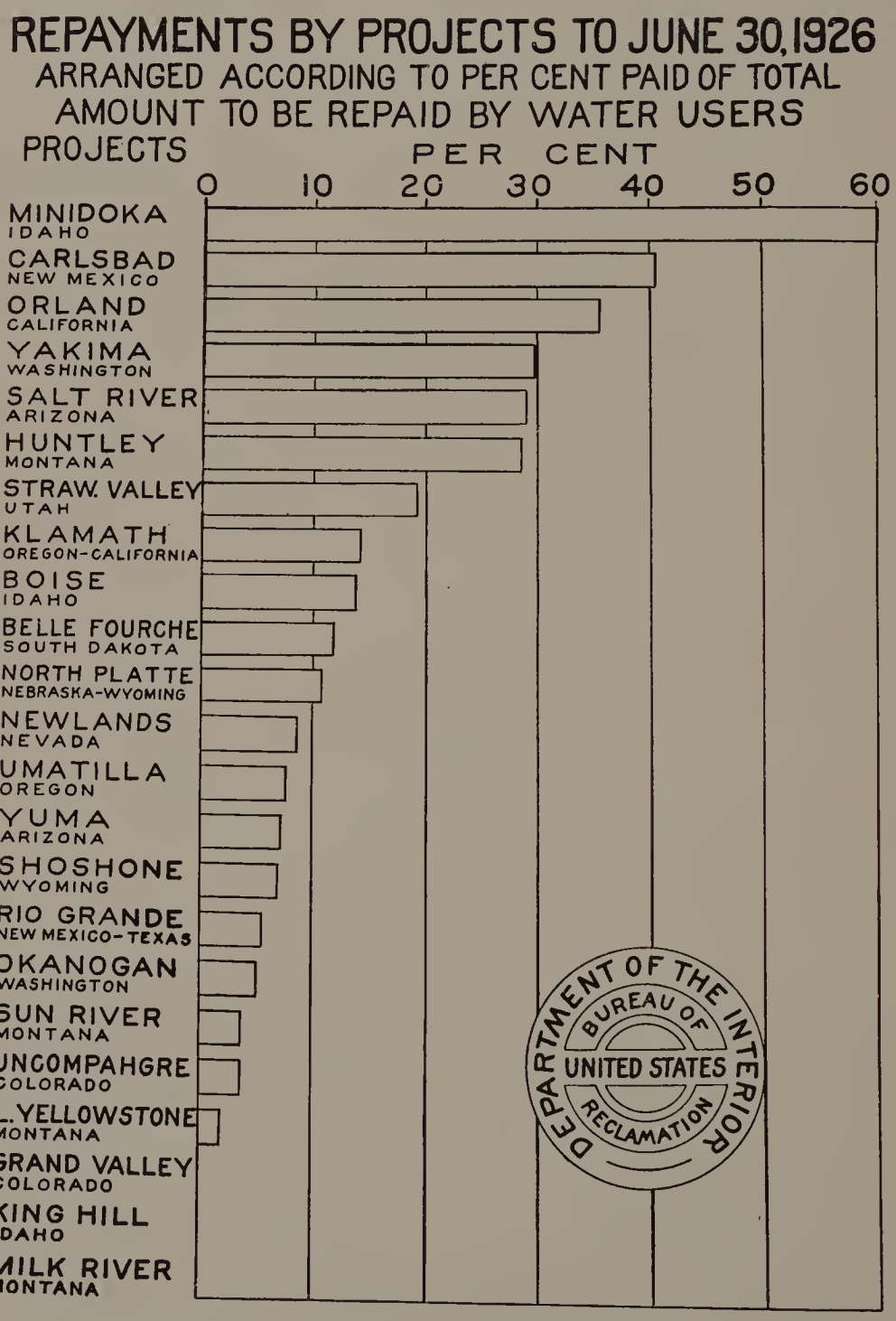
With this modification the act continued without any substantial amendment for 22 years, but in 1923, Secretary Work appointed a

fact-finding commission to inquire into the economic conditions on reclamation projects and to make recommendations. Much of the report of this commission dealt with the struggles of settlers and the need for more skillful cultivators and better farming methods. In 1924, Congress, acting on this report, amended the law so as to radically change its social and economic character.



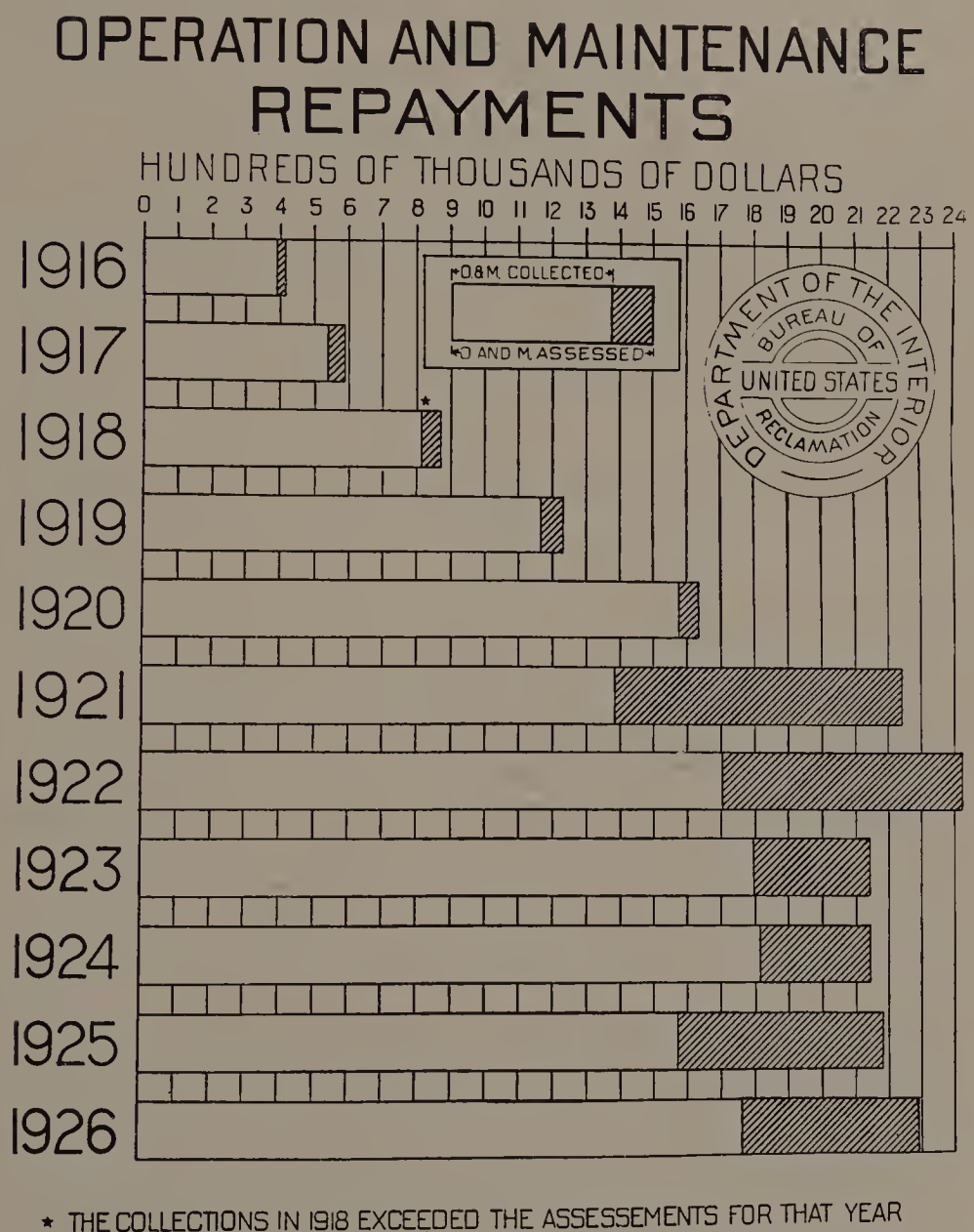

The act of 1924 provided for the making of new contracts with settlers on each project under which payment of arrears could be spread over the remaining years of the debt. It also provided for a further extension of the time of payment of construction charges. Under the existing act, irrigators paid their construction charges in

20 years. Under the new act, those who desired could have their contract changed so that the yearly construction payment would be 5 per cent of the gross value of the crops grown.




In this way payments would be in accord with incomes. In theory it is an admirable arrangement. Payments would be high in good years and low in lean years, but when the attempt was made to put

it in operation certain difficulties arose which made it unworkable. The first is to secure an accurate crop census. The tendency of the settler is to minimize his income. Controversies arose which could not be settled. The dairyman insisted he should not be required to to pay on the income of his dairy herd but on the estimated value of




the crops which his cows consumed. The orchardist argued that he should not be required to pay on the value of his fruit after it had been boxed, but on its estimated value on the trees.

Because of these cost-accounting difficulties the law was repealed by the succeeding Congress, and in its place the Secretary of the Interior is authorized to extend the repayment period up to 40

years, and to vary the construction charge with the productive value of water.

*Land classification.*—In 1902 the opinion was general that all arid land was fertile and that, with irrigation, it could be cultivated with profit. Twenty years' experience showed that this was not correct. It had become apparent that there were considerable areas of land



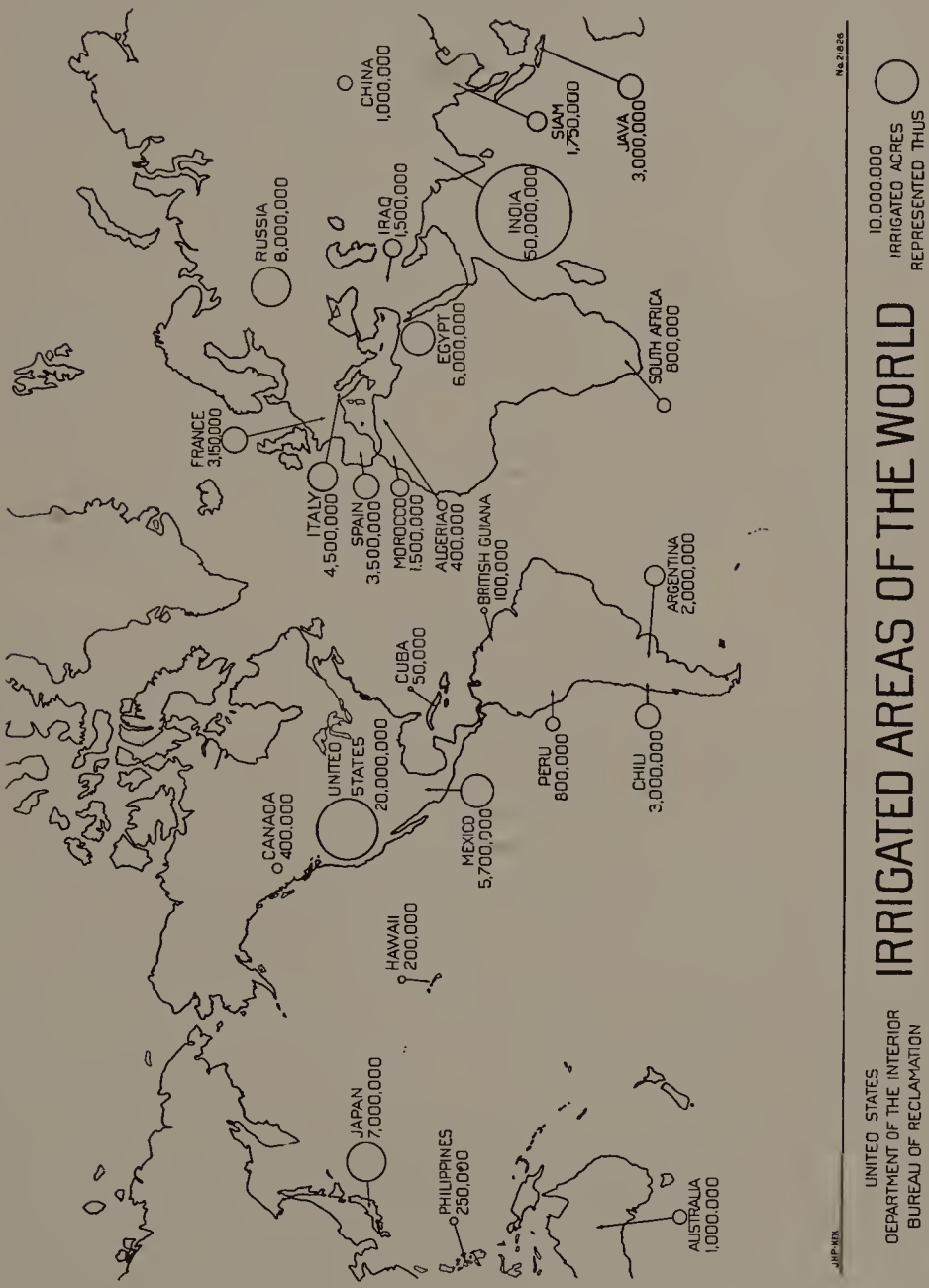

## SUMMARY OF CONSTRUCTION RESULTS

| | |
|---|---|
| DAMS, STORAGE & DIVERSION: Number | 120 |
| ROADS, Miles built | 1,100 |
| TRANSMISSION LINES, Miles | 1,680 |
| TELEPHONE LINES, Miles | 3,350 |
| CANALS & DRAINS, Miles | 16,000 |
| CANAL STRUCTURES, Number | 144,000 |
| TUNNELS (106), Linear feet | 152,000 |
| BRIDGES (11,000) ALL TYPES, Linear feet | 260,000 |
| CULVERTS (12,500), ALL TYPES, Linear feet | 460,000 |
| FLUMES, (4,500) ALL TYPES, Linear feet | 805,000 |
| LEVEES, FLOOD PROTECTION, Linear feet | 1,100,000 |
| CONCRETE IN DAMS, STRUCTURES, ETC, Cu. yds. | 3,700,000 |
| PIPE; CONCRETE, METAL TILE & WOOD, Linear ft. | 3,700,000 |
| EXCAVATION, EARTH & ROCK, Cubic yds. | 252,000,000 |

so impregnated with alkali or with such refractory soil that profitable cultivation was difficult if not impossible, and that the feasibility of a project depended on soil as well as water.

The act of 1924 recognized this. It made provision for the classification of the soil on all projects. In the classification adopted the

soil is divided into six classes. Four are regarded as being able to meet construction payments, one as being temporarily unable to do so, and one as permanently unfit. On the older projects, settlers owning class 6 land were relieved of any obligation to complete their




payments. Those on class 5 were temporarily relieved of this obligation. Wherever any money has been paid on construction it is being refunded.

Twenty years' experience has also shown that poor farmers and poor farming have no place on a irrigation project. It requires

thorough cultivation and intense culture. It also requires the growing of crops that need skill and care in the preparation of the land, cultivation of the crop, and marketing of the products. Hence, the act of 1924 gives attention to the settler's qualifications and requires that on new projects he must show his fitness for the task before him. The law requires him to have two years' experience and a capital to be fixed by the Secretary. This capital will undoubtedly vary in the future with different projects, because the cost of improving and equipping farms will vary, but for the present the Secretary has fixed the minimum capital at $2,000.

In tracing the economic and social improvements in the reclamation act, I have refrained from referring to the great gain to the Nation in the value of land, the yearly returns from its cultivation, and the assistance this has given to transportation, commerce, and industry. Some of these results are shown on the charts lining the walls. I would like to add, however, that on land that was desert solitudes 25 years ago, there were grown in 1925, with water furnished from Government works, crops to the value of $131,000,000, almost equal to the Government's investment of $160,000,000 in these works.

## *CONSERVATION AND USE OF WATER*

*By William Cattanach*

*Chairman, State Rivers and Water Supply Commission, Victoria, Australia*

In all countries in the world supplies of water have a most important bearing on their prosperity. In many countries, of course, the supplies from lakes and rivers are so ample as to require on the part of the governing authorities little need for works of storage or control, but even in these countries all supplies are jealously guarded and their use is controlled in various ways. In many countries where there are ample supplies there is such an abundant rainfall that the use of stream or lake for other than drinking purposes is unnecessary. In other countries again there are in many parts fine river flows, but remote from them though still on the same continent there are large arid patches. By the transference of water from the flowing rivers to such part the whole nature of the country is transformed. In other countries there is not only a shortage of river flows but there are also very large tracts of land which only need water to make them blossom as the rose.

Of these last countries there is no doubt that Australia is a striking example. Her rivers are few, but her areas of land that would

respond to the application of water are vast and extensive, and for that reason in almost every State the policies of the various governments have been to conserve available supplies of water, to seek out new supplies, and to put such water to the best possible use.

A number of the Australian States have made great advancement in this respect; but, although much has been done in this direction, much, on the other hand, stills remains to be carried out, and in this regard it is gratifying to find that every political party is in favor of the conservation of water, and perhaps better still, that policy has the support of a practically unanimous public.

It is true that Australia has several good rivers but in most cases these rivers are intermittent in their flows; that is, while in winter there may be a fine full run of water there is in many summers practically only a trickle, and therefore, if a reasonable use is to be obtained of the waters, it is necessary to carry out works of conservation and regulation.

Everyone knows the general behavior of most of the Australian rivers. One portion of the year, floods; balance of the year, on many occasions, empty beds. If a country is to be prosperous this condition has to be so altered and controlled as to secure practically a reasonable river flow throughout the whole year. This, of course, is done by works of conservation and regulation.

Even the great River Murray, which divides New South Wales from Victoria, with a length of 1,520 miles, at times runs down to a trickle. For instance, in December, 1922, at a point known as Nyah on the Murray there was afloat a steamboat with barge attached. In April, 1923, four months later, one of the commission's officers was able to straddle the river at exactly the same site, and I have a slide depicting a motor car crossing the river bed at exactly the same point. This all means that, if anything like a reasonable use is to be obtained of the river flows, works of conservation and regulation are essential. Australia generally, but particularly my own State of Victoria, has always been keen on water conservation. In the early fifties reasonably good storages were built in various parts of the State of Victoria in connection with tne great mining boom that took place then, and it is interesting to note that a number of the works built for the Coliban (Bendigo) mining rushes in those early years are now being utilized for the development of agriculture in the Bendigo-Castlemaine district.

### STATE CONTROL OF ALL WATER SUPPLIES

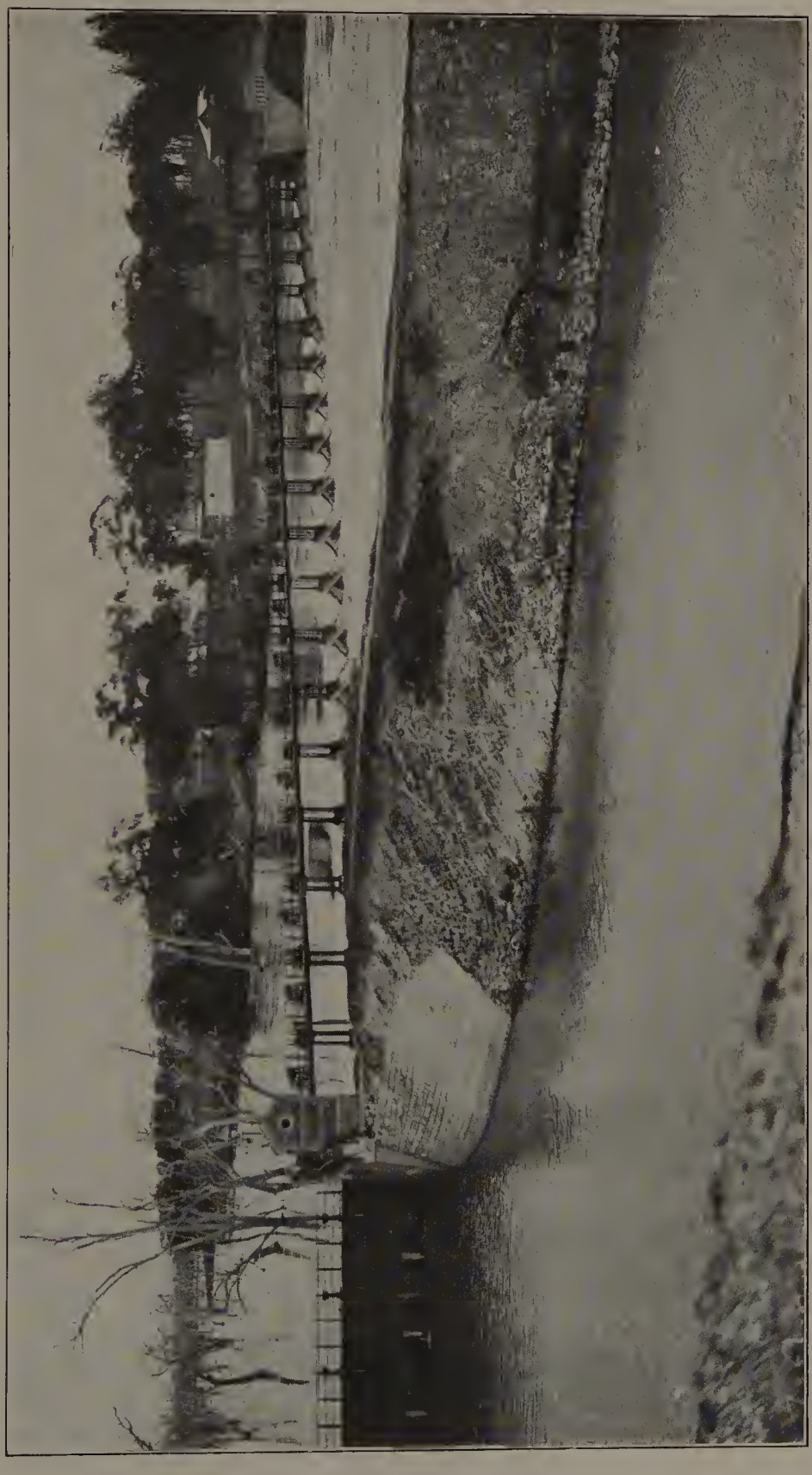
In the year 1886, a short time after a visit of the late Alfred Deakin to the United States of America, a comprehensive water act was passed in the State of Victoria which gave a certain amount of control of all supplies of water in the State. Under this act a number of local

trusts were established throughout Victoria and attention was for the first time seriously directed to the question of supplying water for irrigation, but the greatest legislative development took place in 1906 when a water act, known as the Swinburne Act, was passed which placed under the Crown the control and use of the water in all streams, lakes, marshes, and lagoons, and really removed all private claims to the use of the water, which from that date has belonged entirely to the Crown, and there is no litigation as in many other countries. In the same act a body known as the State Rivers and Water Supply Commission was formed of which I have, from the inception, been a member and am now chairman, and of which Dr. Elwood Mead was its distinguished chairman for some eight years, when he did much to mold its destinies. By the same act all local irrigation trusts were abolished and the control of what might be termed "the water policy of the State" was vested in this water commission, subject, of course, to the control of the legislature as to policy and provision of funds.

Since the inception of the Victorian Water Commission a most vigorous policy has been adopted in regard to the storage of water. Shortly before the constitution of the water commission the public storage in Victoria amounted to 172,000 acre-feet. To-day it is 1,000,000 acre-feet, and this will be increased to no less than 2,300,000 acre-feet when the storage works actually in progress are completed. The result of this policy is that dry visitations, which for years and years have been the dread of land settlers, are being met and conquered and, given anything like a reasonable amount of rain in winter, a supply of water can be provided right through any year both for irrigation and domestic and stock supply.

The State of Victoria, with its limited area of 56,000,000 acres and a rainfall varying from 10 to 60 inches, has expended in round figures £17,000,000 on the storage, control, regulation, and distribution of water. This is independent of the Melbourne water supply, which is under separate control and where something like £7,000,000 additional has been laid out. Half of the £17,000,000 spent has been for irrigation; that is, to provide water for application to the land to increase its productivity, and approximately half has been laid out in providing works for domestic and stock supplies; that is, the provision of water for man and beast on the farm.

As a result of this expenditure, it is estimated that at least one-fourth of the area of Victoria is now artificially supplied with water for domestic and stock use, having channels 8,500 miles in length, while something like 1,500,000 acres are commanded by 2,500 miles of channels for irrigation. In addition to the area quoted there are, of course, many portions of the State which are well provisioned with water from streams and lakes and natural rainfall, but the area



GOULBURN WEIR ON GOULBURN RIVER, VICTORIA, AUSTRALIA

quoted is that where water has been conveyed and where previously no supply existed. As a result of the irrigation supplies large areas of land are now producing very valuable crops, and in a number of areas where the Government, through the commission, has resumed land for closer settlement there are now 20 families living where only 1 family lived before.

### NEW SOUTH WALES

The State of New South Wales, with its area of some 310,000 square miles, has probably 15 per cent of its area under a 10-inch rainfall, 40 per cent under 15 inches, and 58 per cent under 20 inches. It has expended some £9,000,000 on irrigation, the main work being an area in the southern portion of the State known as the Murrumbidgee scheme. It is estimated that eventually some 200,000 acres will be watered, and already 112,000 acres have been subdivided and settled in farms aggregating 2,000 in number. The whole scheme is governed by a reservoir known as the Burrinjuck Dam, consisting of cyclopean masonry and concrete and having a height of 240 feet, submerging about 13,000 acres of land. The capacity of the dam is 771,000 acre-feet and it is dependent on the Murrumbidgee River catchment area of 5,000 square miles. So far the cost of water has been 10s. per acre-foot. In addition to this there are two small but important irrigation districts, one situated at Curlwaa, supplied by pumping from the River Murray and devoted almost entirely to raisin, currant, and citrus growing; and a small area at Hay, on the banks of the Murrumbidgee and drawing its supply therefrom.

The area actually under irrigation in New South Wales is certainly somewhat small compared to Victoria, being only some 71,000 acres in the former State as against 375,000 acres in Victoria; but the State of New South Wales has certainly been most active in another direction; i. e., of water conservation and supply. It has expended some £240,000 in sinking 576 bores in an artesian basin of about 70,000 square miles.; 384 of these bores are flowing and they have now to be licensed and the flow regulated so as to prevent undue waste. Their average depth would be about 2,000 feet. In addition to this, however, the State has sunk 1,900 shallow bores up to 500 feet in depth. This is proving a very popular development and it is undoubtedly opening up some wonderfully good pastoral country. In regard to this it might be interesting to note that there are still a number of people who believe in the divining rod to locate available supplies, and as a matter of interest a record was kept and it was found that while the divining rod had 24 per cent failures the nondivining rod failures only amounted to 14 per cent.

In New South Wales the State, through its water conservation commission, is considering important conservation works, one on the

Lachlan River, where the construction of a reservoir of 300,000 acre-feet is being considered, and also on the Macquarrie River, where a proposal to construct a storage with a capacity of 500,000 acre-feet is being investigated. In addition to this, of course, the State will have the use of a large volume of water from the Hume Reservoir, which is being built with a capacity of 2,000,000 acre-feet. At the Burrinjuck storage on the Murrumbidgee arrangements have been made to generate electric power estimated at 5,000 horsepower to be used for the lighting and service of country towns.

In New South Wales the governing body is practically on the same lines as Victoria, there being a water commission of three members and the use of all water in all rivers and lakes has been made the property of the Crown. Provision is also made for the formation of local trusts should that be required.

### SOUTH AUSTRALIA

In South Australia, with its area of 380,000 square miles, 81 per cent is under 10-inch rainfall, 91 per cent under 15 inches, and 96 per cent under 20 inches. Notwithstanding that, considerable progress has been made in irrigation, the amount expended being well over £4,000,000 and the area irrigated together with that reclaimed from flooding reaching to 33,000 acres, on which there are 1,600 settlers. The main supply is from the River Murray, on which is a storage known as Lake Victoria, having a capacity of 500,000 acre-feet, situated in New South Wales but controlled by South Australia. South Australia has a controlling water commission formed on the same lines, and with practically similar provision in regard to the control of water, as New South Wales and Victoria.

### QUEENSLAND

Queensland, with its area of 670,000 square miles, is really better off for rainfall than a good many of the States. It has only 12 per cent under 10 inches, 24 per cent under 15, and 59 per cent over 20 inches. The control of water is also under an irrigation and water supply commission and it has expended to date about £2,000,000. It has in the Dawson Valley the most ambitious scheme of any State, there being a proposal for the Nathan Dam, with a capacity of 2,500,000 acre-feet. The area commanded will be some 200,000 acres, and the commission is now endeavoring to get the land settled. It is proposed also to establish hydroelectric works at this dam. The dam will be 860 feet in length with a height of 140 feet backed by a catchment of 9,000 square miles.

Queensland has also expended about £300,000 in boring. There are over 4,000 bores, the deepest being slightly over 7,000 feet in depth.

### WESTERN AUSTRALIA

In Western Australia, with an area of 976,000 square miles, there is approximately 76 per cent below a 15-inch rainfall, and so far very little irrigation has taken place. There is, however, a very stupendous domestic and stock supply scheme known as the Goldfields Water Supply, embracing the carriage by pipes of water a distance of 400 miles to supply the goldfields. In addition some 200 bores have been sunk, the deepest being 4,000 feet.

### TASMANIA

In Tasmania there is no irrigation, 98 per cent of the area of 24,000 square miles having over 20 inches rainfall. Great use, however, is being made of the rivers with hydroelectric works, and quite a number of large factories have been established there, owing to the splendid and cheap supply of electric power obtained from the river flows. The hydroelectric development has been most marked in Tasmania, the principal dam having a capacity of over 1,000,000 acre-feet of water. This was obtained by damming the outlet of Great Lake by constructing a wall some 40 feet in height. The flow therefrom has proved of the greatest value to the State and its development generally.

### ALLOCATION OF WATER OF MURRAY RIVER

In Australia, as is usually the case in most countries, there is considerable rivalry among the various States, and only recently the control of the main river, the Murray, was the subject of many State disputes. In 1914, however, an agreement was come to by New South Wales, South Australia, Victoria, and the Commonwealth itself whereby the flow of the greatest river in Australia was allocated, and as a result many important works have been commenced and are in course of construction. The main one is the Hume Reservoir which is now under construction and will have a holding capacity of 2,000,000 acre-feet, having a bank 4,200 feet in length with a height of 120 feet. It is estimated that the cost will be £4,400,000 and it will not only regulate the flow of the river itself but will provide for the irrigation of large areas additionally both in New South Wales and Victoria. It is estimated that from its flow some 50,000 horsepower will be available for the generation of electricity for the greater part of each year, and this side of the use of the water is receiving close attention.

Lower down the river a storage known as Lake Victoria of 514,000 acre-feet has been built at a cost of £420,000. This will safeguard the supplies to South Australia, the last State on the river.

This River Murray agreement also provides for the construction of a number of weirs and locks, and as showing the trend of feeling in Australia it is interesting to note that although provision has been made for locks which could be considered as purely for navigation purposes, quite recently the States agreed that locks serving the dual purpose of irrigation and navigation should certainly receive preference.

The water stored by these reservoirs is used for two purposes, irrigation and domestic and stock supplies, and the practice in each State is generally the same. For irrigation, water is allotted by means of a system called "water rights" whereby a certain amount of water is allotted to each acre irrigable, but for this the landowner has to pay a fixed sum per year whether the water is used or not, the object being to secure a reasonable revenue apart from the vagaries of the weather.

The irrigation side is certainly the most difficult to administer and problems arise from time to time which are very interesting but at the same time require very great effort to meet and overcome. On the whole, however, the systems are working out very well and each year the complications are becoming less and the settlers are becoming better established with financial results satisfactory to themselves. Last year returns from many of the irrigation districts were most gratifying and there is no doubt the introduction of irrigation has proved of immense benefit not only to a large number of settlers but to Australia itself through marked increase in revenue and population.

### INITIATION OF AN IRRIGATION SCHEME

The governing authorities, speaking generally, do not constitute an irrigation district or extend irrigation channels unless there is a fairly unanimous demand from landowners themselves. When such a request is received a statement is prepared showing the probable cost of supply so that each landowner can decide whether the likely return justifies the increase in expenditure. So far it is gratifying to state that generally the governing authority is receiving more request for irrigation than it is quite able to supply, showing a continued demand for its benefits. As a matter of fact it can be taken as an axiom in Australia that the extention of irrigation is not governed by the amount of land available but by the quantity of water that can be made available for irrigation. The usual practice in an irrigation district is to prepare a register of lands setting out the area considered suitable for irrigation, excluding therefrom all unsuitable areas of lands that are too high or marshy, and on the balance a water right is allotted, in some cases on the basis of 1 acre-foot of water to each acre of land suitable, in others again 1 acre-foot of

water to, say, every 4 acres of land. The former system can be said to lead to much more intensive cultivation while the second leads to fodder growing for herds and flocks and perhaps can be looked upon as a step toward the one-in-one system.

It may be added that each landowner has a right to appeal against the description of the land in the land register and if he thinks too much land is made subject to the irrigation charge he can appeal in the same way as he can appeal against the valuation of his property for municipal rating. The charge for water is based on the cost of supply—i. e., the interest on the cost of works, depreciation, and running expenses—and it varies from 6s. to 12s. per acre-foot for a gravitation supply and from £1 to £1 4s. per acre-foot for pumping supplies.

### DOMESTIC AND STOCK WATER

The other great use that water is put to in Australia is what is known as the domestic and stock channel supply; that is, tank supplies from channels for man and stock. The most striking example of the domestic and stock supply system is probably in my own State of Victoria in what is known as the Wimmera-Mallee scheme.

This serves an area of some 11,000 square miles or 7,000,000 acres of land, mostly what is known as Mallee or small eucalyptus country. Through this huge area the water commission has run water channels aggregating about 5,000 miles in length. In these channels water is run from what might be relatively called the "wet" south at the Wimmera River to the "dry" north some 300 miles distant. The channels are run as far as practicable in the cool months of the year because it is found that the loss by seepage and evaporation is much less then than in the summer months. In fact, channels have been known to cease running in summer even when a good head of water has been placed in them at their source. As far as practicable each farm is commanded by one of these channels and landowners are required to construct on their holdings tanks of sufficient capacity to meet their requirements for at least one year. To encourage the landowners to place down proper sized tanks the commission charges the landowner the same amount per year whether he fills a 500 cubic yard tank or a 15,000 cubic yard tank, the object being to induce the landowners to provide tanks of ample capacity, and incidentally it has been found in the State of Victoria that nothing under a tank of 2,500 cubic yards for each square mile is safe for a dry year's requirements. The result of this system, which is believed to be the largest of its kind in the world, is that this Wimmera-Mallee area now supports a population of fully 100,000 people and that as a result, in the Mallee itself, which comprises 11,000,000

acres, fully 8,000,000 are now satisfactorily settled. In this area there are no less than 40 towns which draw their water from this supply and distribute it through the town by pipe system.

The annual and only charge is a rate on the net annual value of the land, i. e., a valuation is made which is on the basis of 5 per cent of the fair selling value. This valuation can be appealed against by a landowner before any rate is fixed and so satisfactorily has this system worked in Victoria that in the 20 years the commission has been in existence there are not even 20 cases which have gone to the court. After the valuation is made the various districts are subdivided into three divisions. The first division represents those properties which are either touched by a channel or are situate within 1 mile from the channel; these pay full rate. The second division represents those properties which are more than 1 mile from a channel but could be commanded within 2½ miles; these are placed in a half rating division. The third division comprises those lands which are not included in the first and second divisions and on these only a quarter rate is charged.

It is estimated that the total cost of this Wimmera-Mallee scheme is £2,000,000, which would work out at a capital cost of 6s. per acre. On the other hand, the enhancement in value is not less than £4 to £5 per acre over the total area, while in certain parts the enhancement would probably be double this. The annual rating works out at £10 to £20 per square mile. Rates vary from one-half to three-fourths.

So satisfied has the Government been with the success of the Wimmera-Mallee scheme that it is now undertaking, through the water commission, the reticulation of an area known as Millewa, further to the northwest between Mildura and the South Australian border. This area consists of 1,000,000 acres of splendid mallee lands, but unfortunately it can not be commanded by gravitation and water has to be lifted from the River Murray. This is being done by means of powerful pumps which will lift the water at one stage 125 feet and at another 150 feet additional.

So keen is the water commission in Victoria to provide water for settlers that an effort is now being made to try out artificial catchments, i.e., certain areas will be laid down with some impervious material, probably iron, and water will rapidly run off this into a concrete tank which will be covered and water only removed by pumps. In this way it is believed that in those few areas which can not be reached by gravitation or river-pumped supply at least a partial supply may be given. In any case, the trial is well worth making.

SMALL HOLDINGS

In Australia, as in all new countries, land was, in the first place, taken up by the squatter or rancher in large areas, and the earlier history of all the States is really the history of a fight to unlock the lands. By free selection these large areas were gradually reduced, but it was not until recently that a further important step was taken in the resumption by the several governments of land for what might be termed small holdings. In all the States, and particularly in Victoria, a number of areas have been resumed from owners and divided into holdings, in dry areas where there is no irrigation into blocks of some 300 acres, and in closer settlement districts under irrigation into blocks averaging some 44 acres. These lands were sold to settlers on long-term contracts of some 36½ years bearing interest and redemption at the rate of 6 per cent. The size of holdings was limited by the capital value, which varies from £2,500 to £3,500.

An effort was made to obtain as suitable a class of settler as possible, and it was found that a minimum capital of from £300 to £400 was necessary, although there were many cases where men with less capital succeeded. Advances were made by the Government to settlers in the case of ordinary settlers on the basis of 80 per cent of the value of improvements effected, and in the case of soldier settlers up to 100 per cent. It was early found, however, that even with this liberal system of advances it was much better to build houses in advance of settlement, prepare anyway a small portion of land, and in many cases to have them planted. In addition to this in each irrigation area skilled supervisors have been appointed to assist the settlers not only in their agricultural labors, but also to take part in their social life, because it was early found that the feeling of isolation was a leading factor in discouraging settlers. Further than this the Government, through its state savings bank or its rural credit organization, advanced money for canneries, packing houses, and generally for providing outlets for all settlers. What has been done in Victoria has to a very great extent been carried out in other States, and it seems undoubted that if closer settlement is to succeed, the State, which after all receives a most marked benefit from the settlement, must provide agencies for dealing with the products of the settler, who after all is the grower and not the selling agent. The State must also endeavor to make life on the land as attractive as life in the neighboring towns.

*Closer settlement a success.*—Speaking generally, closer settlement in the irrigation areas has been successful. Taking a typical district, Bamawm in the Rochester irrigation area, it is found that 51 per cent of the original occupiers are still on their blocks, 26 per cent sold

out at a profit after six years, while 10 per cent disposed of their holdings before six years but without a loss, and in that area only 13 per cent abandoned their holdings with loss. In that particular district there were practically 50 per cent of oversea and 50 per cent of Australian settlers. Another typical case is Shepparton. Taking the original area as some 10,000 acres, the then number of families was only 20; to-day it is 300. The approximate capital of settlers at ingoing was £44,000; it is now estimated that they are worth £336,000. During the same time the revenue of the State-owned railway has increased by no less than 209 per cent.

Taking closer settlement in the irrigation districts as a whole, but excluding soldier settlers who have not yet been long enough on the land to be counted in, the liabilities at the present time amount to £418,000 while the assets amount to no less than £1,600,000. Even with the soldier settlers, many of whom were maimed and injured in the war and had practically no capital, the balance sheet shows over £200,000 to the good of the soldier settlers in the irrigation areas.

The two districts named are fairly typical of what is taking place, and although the successful promoting of a closer settlement irrigation area is most difficult and trying to all concerned, it does, on the other hand, provide splendid openings for men with small capital, and it breeds and brings up a splendid rural population which will make any country safe in life's run.

Dealing with irrigation and water supply generally there is no doubt that, as a result of the various States' activities there has been a much greater return from the lands served. The increase in products has been remarkable and each year Australia is getting further away from those dry, devastating periods which were the bane of our forefathers and the reports of which even now are circulated throughout the peoples of the world with special headlines with regard to disastrous drought. It can be truly said that these have practically departed from Australia, and we can with confidence let the world know that we have not only overcome one of our greatest defects but are becoming a shining example as one of the best water provisioned and producing countries of the Empire.

### MARKETING

One aspect of the whole question of production, particularly production under irrigation, is of course the everlasting one of markets. There is no doubt that under irrigation practically all products and farming activities of the Temperate Zone can be produced and carried out—fruit, raisins, and currants; fodder crops; dairying; sheep; lamb and pig raising, but with many it is a problem to quite decide where the outlet will be. I venture to say, however, that the outlook is

much improved as against the last few years and I think is improving every moment. The new spirit of Empire goods for Empire consumption is making a most marked difference, and Britain, our principal outlet, is finding that as the Dominion market takes probably 50 per cent of all British exports she in turn must increase, and is increasing, the consumption of Empire goods. In this Australia must share.

Also the whole East, notwithstanding recent troubles, is awakening to western ideas and western foods are now becoming the rule instead of the exception in those countries with teeming populations. The last bulletin stated that in northern China there was now more white flour used than any other basic food, and while that is true of flour it will every day become true of other lines of Australian products.

The East is geographically nearer Australia than almost any other country, and we should, if we want to be great and make this country prosperous, obtain a share of that great, expanding, and unlimited market.

## LAND SETTLEMENT IN AUSTRALIA

1. *Natural conditions.*—All depends on rainfall; no long, cold winter; only small part mountainous. Wide range products—plums to pineapples, cabbages to cotton. About 500 miles nearer Equator than United States of America. Area, 3,000,000 square miles, one-fourth to one-third suitable close settlement.

2. *Settlement.*—(*a*) Close settlement, coastal fringe; (*b*) partial settlement, semiarid, by dry farming and water conservation.

3. *History.*—(*a*) Pastoral—1,800 sheep; New South Wales, Victoria, Queensland.

(*b*) Dairying—first export butter 1890; New South Wales, Victoria, Queensland.

(*c*) Frozen mutton and beef—1880 onward; New South Wales, Queensland, Victoria.

(*d*) Agriculture—wheat—1880 on; South Australia, Victoria, New South Wales.

(*e*) Irrigation—1890 on.

4. *Allocation and sale of land.*—(*a*) Free grants, 1788–1831 abused—no quit rents paid.

(*b*) Land sales and pastoral leases, 1831–1861.

(*c*) Free selection before survey, 1861–1884—no precautions against dummying led to aggregation of holdings.

(*d*) Free selection with compulsory residence, limitation of areas, and construction of improvements.

5. *Purchase and resumption for closer settlement.*—(*a*) South Australia began 1890.

(*b*) Other States 1890–1900.

(*c*) Closer settlement under irrigation—Victoria 1908, New South Wales, and South Australia later, Queensland 1926.

*Closer settlement.*—(A) All States have similar foundations to closer settlement and discharged-soldier settlement.

(*a*) Compulsory residence for periods from five years to perpetuity.

(*b*) Improvements to certain varying values must be effected in first few years.

(*c*) Annual payments where freehold is eventually given fixed amount include both principal and interest.

(*d*) Preventives of aggregation: (1) Limitation of purchase to those not owning property in excess of certain amount. (2) Limitation of number of blocks that can be owned. (3) Limitation of size of holdings by capital value varies £2,500 ($12,500) to £5,000 ($25,000).

(*e*) Provision for compulsory purchase—seldom used.

(*f*) Low deposit—nil to 5 per cent capital value.

(*g*) Advances on security of improvements, stock, implements, with limit £500 to £625 and from 50 per cent to 80 per cent of valuation. Soldiers 100 per cent

(B) Peculiarities in various States.

New South Wales. Closer settlement schemes may be promoted by private individuals and financed by State. Both perpetual and conditional purchase leases.

Victoria. In mountainous areas—interest may be capitalized for first 10 years subject to cultivation and improvement .

Queensland. Perpetual leases only—revaluation every 15 years.

South Australia. Lower rates—repayments first 8 years.

(C)—*Comparison; closer settlement and soldier settlement; area of States; area alienated and in process of alienation*

| Particulars | New South Wales | Victoria | Queensland | South Australia |
|---|---|---|---|---|
| | *Acres* | *Acres* | *Acres* | *Acres* |
| Area of States | 128, 036, 500 | 56, 245, 760 | 429, 120, 000 | 243, 244, 800 |
| Area alienated and in process of alienation | 60, 850, 000 | 33, 500, 000 | 25, 600, 000 | 14, 000, 000 |
| Closer settlement: | | | | |
| Area acquired | 3, 819, 376 | 922, 771 | 785, 311 | 735, 703 |
| Purchase price | 13, 795, 172 | 7, 032, 315 | 1, 955, 061 | 2, 421, 131 |
| Number of farms | 7, 598 | 5, 887 | 2, 403 | 2, 851 |
| Advances made | [1]£125, 157 | £727, 179 | [2] | £915, 384 |
| Soldier settlement—area: | | | | |
| (1) Crown lands set apart | 7, 333. 965 | 528, 446 | 623, 856 | 668, 501 |
| (2) Private land acquired | 1, 855, 073 | 1, 749, 662 | 41, 101 | 2. 349, 267 |
| Price paid private land | £8, 103, 943 | £13, 214, 902 | £270, 480 | £4, 352, 572 |
| Price per acre | £4/7/6 | £7/11/0 | £6/12/0 | £1/17/0 |
| Total number of farms | 9, 098 | 8, 640 | 1, 854 | 3, 191 |
| Advances made | £5, 667, 425 | £5, 560, 000 | £1, 520, 293 | £1, 883. 373 |

| Particulars | West Australia | Tasmania | Northern Territory | Total |
|---|---|---|---|---|
| | *Acres* | *Acres* | *Acres* | *Acres* |
| Area of States | 624, 588, 000 | 16, 788, 000 | 335, 116, 800 | 1, 903, 732, 000 |
| Area alienated and in process of alienation | 23, 000, 000 | 6, 200, 000 | 476, 556 | 165, 000, 000 |
| Closer settlement: | | | | |
| Area acquired | 461, 959 | 100, 727 | | 6, 752, 758 |
| Purchase price | 484, 411 | 365, 148 | | 25, 398, 099 |
| Number of farms | 1, 133 | 303 | | 20, 159 |
| Advances made | [3] | £9, 514 | | |
| Soldier settlement—area: | | | | |
| (1) Crown lands set apart | 13, 942, 533 | 63, 330 | | 23, 160, 424 |
| (2) Private lands acquired | 345. 110 | 268, 209 | | 6, 602, 871 |
| Price paid private land | £605, 075 | £2, 010, 225 | | £28, 557, 198 |
| Price per acre | £1/15/0 | £7/10/0 | | £4/6/0 |
| Total number of farms | 1, 134 | 1, 935 | | 23. 071 |
| Advances made | [4] £4, 693, 479 | £333, 770 | | |

[1] Also from rural bank.
[2] All through agricultural bank.
[3] Through agricultural bank.
[4] Includes advances from agricultural bank to 4,117 settlers on own properties.

*Closer and soldier settlement under irrigation.*—Same general conditions as dry settlement. Initiated in Victoria in 1908; lands department purchasing and subdividing and water commission supplying water. Found to be unworkable; now since 1912 State rivers and water supply commission has full control.

New South Wales: Main scheme Murrumbidgee; subdivision July, 1912; all under control of water conservation and irrigation commission.

*Present position in Victoria—Closer settlement only*

| | | | |
|---|---|---|---|
| Farms (number) | 1, 634 | Agricultural laborers' allotments (number) | 149 |
| Total area (acres) | 91, 206 | Area (acres) | 921 |
| Average area (acres) | 55 | Average area (acres) | 6 |
| Capital value | £777 | Average capital value | £111 |

*Position of irrigable land account*

| | |
|---|---|
| Debit: Total cost of land, capitalized interest, expenses prior to disposal, improvements included in capital value | £2, 065, 854 |
| Credit: Sales under conditional purchase lease, public competition, and lands awaiting subdivision at purchase price | £2, 131, 076 |
| Balance available to meet losses | 65, 222 |

Administration charges met from difference between interest payable on borrowed money, in the beginning 3 per cent and 3½ per cent now, an average of £4/8/8 per cent, and the rate chargeable on land till 1921, 4½ per cent, now 5 per cent, and interest chargeable on advances, 5 per cent.

At present:

| | |
|---|---|
| Approximate revenue: | |
| £1,800,000 at 5 per cent | £90, 000 |
| £320,000 at 3 per cent (lands vacant and not yet made available) | 9, 000 |
| | 99, 000 |
| Approximate interest payable, £2,120,000 at £4/8/8 per cent | 93, 867 |
| Surplus available for administration and losses | 5, 133 |

*Present position—Closer settlers*

| | |
|---|---|
| Liabilities: | |
| Arrears of interest | £145, 100 |
| Net advances | 272, 891 |
| | 417, 991 |
| Assets over which security is held: | |
| Improvements | 880, 452 |
| Stock and implements | 393, 167 |
| Payments of principal made on land | 300, 000 |
| | 1, 573, 619 |

*Position individual estate—Shepparton*

| | |
|---|---|
| Shepparton Estate—(original portion opened in 1912–13 only): | |
| Area (acres) | 9, 200 |
| Original number of properties | 21 |
| Original number of families | 20 |
| Present number of holdings | 290 |
| Present number of families | 300 |
| Approximate capital of settlers at ingoing | £43, 700 |
| Date originally settled | 1910 |

| | | |
|---|---|---|
| Original price of land and cost of subdivision | | £154, 000 |
| Advances made | | £45, 000 |
| Progress made: | Position 1916 | Position 1926 |
| Value of improvements | £69, 320 | £230, 000 |
| Value of stock | £16, 233 | £31, 000 |
| Value of implements | £9, 269 | £23, 000 |
| Population | 1, 026 | 1, 250 |
| Acreage under orchard | 2, 026 | 5, 000 |
| Increase population, Shepparton town | 800 | 1, 250 |
| Amount paid off land | £16, 000 | £46, 000 |
| Advances repaid | £14, 000 | £25, 000 |
| Present position: | | |
| Assets— | | |
| Land | £180, 000 | |
| Improvements | 230, 000 | |
| Stock | 31, 000 | |
| Implements | 23, 000 | |
| | | £464, 000 |
| Liabilities— | | |
| Still owing land | 108, 000 | |
| Owing advances | 20, 000 | |
| | | 128, 000 |
| Lessees' equity (£1,158 each) | | 336, 000 |
| Revenue Shepparton railway station: | | |
| 1909 | £10, 462 | |
| 1925 | 32, 393 | |
| Increase | 21, 931=209 per cent. | |

*Soldier settlement—Irrigable areas*

Difficulties: High prices land, stock, implements; men not altogether suitable.

| Still position assets and liabilities— | | Assets— | |
|---|---|---|---|
| Arrears interest | £930, 022 | Stock, implements | £318, 864 |
| Net advances | 987, 104 | Improvements | 1, 746, 603 |
| | | Repaid on land | 117, 000 |
| | 1, 917, 126 | | 2, 182, 467 |

## *LAND-SETTLEMENT POLICIES AND THEIR RELATION TO THE DEVELOPMENT OF A PROSPEROUS AGRICULTURE IN THE UNITED STATES*

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My paper deals with the relation of land-settlement policies to the development of a prosperous agriculture in the United States. I desire to make clear at the outset that my subject covers broadly the problem of maladjustment in agricultural production resulting

from excessive expansion of the farm-land area, whether through irrigation, drainage of swamp lands, clearing of cut-over timberlands, or any other form of reclamation, as well as through excessive stimulation of production on lands already in farms.

My remarks will be directed to the situation that obtains in the United States. It is recognized that conditions in various countries differ widely and that the land policies suited to the needs of this country may not be suited to those of other lands, and vice versa. Broadly speaking, there are several important contrasting conditions which characterize the background of land policies in various countries. There are certain countries of very dense population in which the land problems are or recently have been complicated by the continuance of feudal restrictions which have held over from an earlier period. Land policies in states of eastern Europe in recent years have centered upon the elimination of these feudal restrictions and their results and the provision of a more liberal type of land tenure. This activity has gone hand in hand with effort to make land available to those desiring farms.

A second group of countries comprises those nations where feudalism and its residual restrictions have been largely swept away, but where populations are very dense and where, therefore, a primary object of land policies is to provide farms for those desiring them. Since land is scarce, the problem is to find farms for those who are on the waiting list, so to speak, and who eagerly desire to obtain them. In general, the countries of central and western Europe belong to this group. A third group includes those countries which are relatively underpopulated and have large areas of vacant land suitable for cultivation. The important problem of such countries is to attract immigrants, and their land policies center upon the opportunities for obtaining cheap virgin land of good quality as an inducement to immigration. Canada is in this group, and, to a large extent, Australia and South Africa. Italy and France likewise are trying to attract European immigration to replace or supplement the native population in their African Provinces.

It is obvious that the United States can not properly be put in any of these groups. We have never had any important feudal restrictions in this country, and such few vestiges of feudalism as obtained a foothold in the early Colonial period have been swept away for more than a century. We do not belong to the group of countries characterized by excessively dense population and therefore do not have a clamorous demand for farms. Indeed, it has been our problem of late to keep people from leaving the farms. Furthermore, it is quite clear that we have passed beyond the stage represented by the third group of countries. We no longer have an abundance of virgin land of good quality, which, coupled with sparseness of

population and economic underdevelopment of the Nation, might justify the employment of land policies to stimulate immigration. In fact, we have recently adopted a policy of restricting immigration. Since this country, therefore, has conditions which are peculiarly its own, it is obvious that we can not gain much by blind imitation of land policies in foreign countries where conditions are fundamentally different from those in this country.

### PROSPERITY FOR AGRICULTURE—THE GOAL OF A CONSTRUCTIVE LAND POLICY

What, it may be pertinent to ask at this point, should be the primary object of our land policy? Above all things, that policy should promote a rural prosperity and culture which make living on the farm as rich and attractive as living in the city. It is not enough that the farmer produces the food and raw materials required for the sustenance of mankind; he must produce them at a profit. It is not enough that the farm affords the farmer and his family a place to live; it must be an attractive home with all the advantages which make for culture and the highest type of citizenship. This is not a narrow class view of the problem; it is a national viewpoint which predicates national prosperity upon the economic and social welfare of all groups.

The prosperity of agriculture is partly dependent upon the land policy we employ and, conversely, the success of any land policy is largely dependent on the prosperity of agriculture. A prosperous agriculture can not be achieved by overdevelopment and overexpansion, which injures not only established farmers but also new settlers.

The tendency to agricultural overexpansion is almost world-wide, and there is good reason to believe that cut-throat competition among farmers has been an important factor in making land settlement on a successful basis so difficult.

It is important to recognize also that the process of pushing agricultural expansion too rapidly tends to defeat its own end, if that end is the establishment of prosperous families on the land. It is true that there has been a sort of sentimental idea that what we really should do is to create self-sufficing farm homes. The underlying idea is that there is such peculiar virtue in residence on the farm that the mere living on farms is of essential value, not only to the dwellers themselves but also to the Nation as a whole. I shall not attempt to argue the question as to the advantages to the Nation of a considerable agricultural population. It is quite probable that some of these advantages have been greatly exaggerated; but that we need a substantial agricultural population in order to have a well-balanced national life is freely recognized.

The important point is that in this day and age the idea of promoting residenee in the country unless that residence can be maintained on a profitable basis to the family is to expect an impossibility and fly in the face of all modern tendeneies. Our pioneer forefathers were willing to go into the wilderness and live from hand to mouth with little dependence on buying or selling and to endure extreme hardships. Even they, however, were looking forward to eommereial produetion and an inereasc in land values. Industrialization of the Nation has put a premium on labor power and men are not going to devote their time and strength to the maintenanee of a crude subsistenee based largely on direet eonsumption of farm products. Even in Europe the peasants of the more highly industrialized countries are tending to go to the cities. This tendency is espeeially manifested of late in Franee, whieh has so long had a large population of peasants living a semi self-sufficing type of life. Furthermore, any poliey of land settlement which involves the incurring of eapital eharges—and this is eharacteristie of present-day land-settlement projects—necessarily ealls for profitable farming to enable the individual to meet sueh eharges. The phrase "self-sufficing farm homes," therefore, is meaningless unless it means self-supporting eeonomically.

## SPECIAL CONDITIONS WHICH SHOULD BE KEPT IN MIND IN SHAPING OUR LAND POLICIES

I believe we ean make greatest headway toward an understanding of the land problem in the United States and the polieies that are best suited to our needs by eonsidering the speeial eireumstances surrounding our agrieulture, and I propose to devote a eonsiderable part of this paper to an analysis of these speeial eonditions.

We have recently emerged from the position of eountries whieh have found it desirable to employ land as a bait to attract immigrants. Consequently, we have on our statute books a number of laws embodying polieies whieh have been left over from an earlier stage of our eeonomie development, and some of these polieies are distinetly anachronistic.

For one thing, we still have our homestead laws, ineluding the forest homestead aet. It is very generally recognized by students of land eeonomics that sueh legislation is not only useless at the present time but on the whole distinctly harmful. There remains little if any land in the publie domain whieh is fit for farmers to take up under existing homestead laws, and these laws merely serve at the present time to attract people to hopelessly impossible attempts to establish themselves on the land, while at the same time interfering with the existing ranch industry in regions whieh are suitable only for that type of economy. The desirability of eliminating these

measures from the statute books has been recognized by the Department of the Interior and in the case of forest homestead laws by the Forest Service. Furthermore, our continued adherence to the old policy of allowing the public domain to be used as a grazing common is generally regarded as exceedingly wasteful.

Our potential agricultural land not now utilized is at the same time both scarce and abundant, paradoxical as that statement may seem. It is scarce in the sense that we have no large area of potential agricultural land of good quality which does not require some form of reclamation to make it available—that is, either irrigation, drainage, or clearing of stumps and brush. This condition has been changed somewhat of late by the development of methods of economically utilizing semiarid lands.

On the other hand, our potential reserve agricultural land is abundant in the sense that we have a large area which is physically capable of being utilized for cultivation when economic conditions justify such use. It has been estimated roughly by the Department of Agriculture that in addition to the land already in cultivation there are upwards of 600,000,000 acres of land physically capable of being brought under the plow. Practically all of it, however, is either of low quality from the standpoint of fertility or available rainfall, or it requires some type of reclamation; and it is not likely that we shall ever utilize for cultivation all of this vast area which may be considered physically capable of such use. Furthermore, with the increase of population a good deal of this potentially cultivatable land will be needed either for pasturage in farms or for forests.

Outside of the reserve land devoted to national forests and national parks and outside of the public domain suitable only for grazing under range conditions, we have no large area of land under public ownership that can be devoted either to forests or to farming. Therefore, our land policy must necessarily be determined in large measure by the fact that our potential agricultural land is now largely in private ownership.

Some of our agriculture land reserve is still owned in large blocks by private owners, such as railway companies, lumber and mining companies, etc., but a very considerable proportion of it is already in farms. According to the preliminary report of the census of agriculture for 1925, the total area of land in farms comprises about 924,000,000 acres. Of this total area, 391,000,000 acres were in crops including crop failure and fallow land. About 409,000,000 acres were reported as used for pastures, of which 115,000,000 acres were reported as plowable. It is apparent, therefore, that within the boundaries of existing farms there is considerable room for expansion in the area of land in cultivation, and it is quite probable that a very large part of our

expanding demand for agricultural products growing out of increasing population will be met by utilizing more fully the available land resources now in farms. In some cases incidental reclamation on a small scale will be required, as, for instance, drainage of small tracts of wet land, clearing of stumps and brush, and in some cases the renovation of worn-out land. A considerable expansion of the area of land in farms has occurred in some of our cut-over timber regions during the past decade, but many of these farmers have not progressed very far in the process of clearing the available land. This process, however, is going forward steadily and even during the five years between the census of 1920 and the census of 1925, a period of general depression in agriculture, it is reported that upwards of 4,000,000 acres were cleared and made suitable for cultivation. Furthermore, as a result of the large expansion in the area of land in farms in the semiarid regions of the United States during the past 15 years considerable areas have been included within the boundaries of farms which have not yet been devoted to crops, but which will be gradually broken up and put in cultivation.

It is obvious that from many points of view it is much more economic to meet any demand for increased agricultural production by utilizing lands already in farms than by attempting to establish new farms, especially if the land to be included in the new farms is not advantageously located and of a quality greatly superior to that already in farms. The expansion of cultivation within the limits of existing farms has the great advantage that farm buildings and improvements as well as roads, schools, churches, and other community facilities are already available. In fact, the utilization of land already within farm boundaries frequently is the means of expanding the income of existing farms without adding unduly to the overhead expenses of the farm business. It appears, therefore, that we should thoroughly explore the possibilities of meeting our expanding requirements from this source before venturing upon other plans for increasing the number of farms.

This general point of view is strengthened at the present time by the fact that apparently our great activity in the past 10 to 20 years in irrigating and draining land, combined with the existing depression in agriculture, has resulted in our having on our hands a considerable area of land in irrigation and drainage districts which is not fully utilized and in some cases not even occupied. The census of 1920 showed an area of nearly 7,000,000 acres in irrigation enterprises for which water was available that was not irrigated, the percentage of unused land being about the same in the Government projects as in the others, and more than 20,000,000 acres of land in existing drainage enterprises that were not classed as improved land. A recent study of typical drainage districts in the Mississippi Valley

and the South Atlantic States, made by the Department of Agriculture, showed that less than 40 per cent of the land in these districts was in cultivation, and in a considerable number of projects little progress had been made in bringing the land under cultivation or in even getting it occupied. For some time still these lands, already in organized districts and not fully utilized, afford a considerable opportunity for the expansion of agricultural production.

A most significant change, also, has occurred of late in the character of the demand for the agricultural lands. The development of drought-resistant varieties of wheat and corn and the invention or employment of certain labor-saving machines and implements, such as the harvester combine, sleds for picking cotton, two-row cultivators, power machinery, and large horse teams, have tended to reduce greatly the cost of cultivation on a fairly large scale in the semiarid regions and also have tended to place a premium on level or nearly level lands where such implements and methods can be most effectively employed. As a result of these changed conditions there has been a large expansion in the past five years in these semiarid areas despite the depression. Preliminary results of the Census of Agriculture for 1925 indicate that in the States west of the tier of States including Minnesota, Iowa, Missouri, Arkansas, and Louisana, there was a net increase in crop land of about 3,500,000 acres. This was due mainly to the expansion of dry farming. In the region east of the eastern boundary of these same States, there was a net decrease of nearly 19,000,000 acres. This tendency toward the expansion of agriculture into semiarid regions is manifesting itself also in Australia and South Africa, with the result that our humid areas are feeling the competition of this new type of agriculture, particularly in the cultivation of the staple crops. The reduction during the past five years of the area of land in farms as well as of the crop area in our humid farming regions should give pause to proposals for draining additional lands in humid regions and to extensive projects for bringing cut-over lands into cultivation.

It is apparent that large areas especially in the humid regions are confronted with the problem of making important readjustments in their system of farming. It is doubtful, however, if in many cases these readjustments involve what may be called organized land settlement. They have to be carried out largely by individual farmers, and the necessary changes must be determined by careful research in agronomy, animal husbandry, and farm management and must be promoted among the farmers by extension work and by the development of effective cooperation. There is a bare possibility that in certain regions such as central Georgia, where agriculture has been greatly demoralized, not only by the boll weevil, the competition of

new cotton lands of the Southwest, and by the conditions growing out of the depression but also by extensive migration of negro labor resulting from these conditions, a change in the system of land tenure is called for and possibly even the immigration of more white farmers. This conclusion, however, is by no means apparent, and considerable study is required in order to make sure whether such action would be wise.

### STIMULATION OF EXPANSION OF FARM LANDS

We have never had, and do not now have, in the United States the problem of expanding our area of land in farms with sufficient rapidity to meet our requirements. Since our land is largely in private ownership, private and semiprivate agencies in this country are constantly stimulating the expansion of the area of land occupied by farmers. The pressure of carrying charges and taxes naturally induces the owners of large tracts of land to make an effort to dispose of this land. As a result, it is probable that our agricultural area tends to be expanded too rapidly and not only that but frequently in the wrong direction, so that lands are brought into farming which should not be so used but rather should be retained for forestry or for grazing under range conditions.

In addition to private agencies that are pushing land into use, Government agencies in this and other countries are actively engaged in stimulating the movement to the land. In our own country, not only do we still retain the old homestead legislation which has already been referred to but also we have a reclamation policy which carries with it a subsidy to agricultural expansion. This subsidy consists indirectly in the aid supplied to various projects in the form of engineering advice, investigation, and assistance, and directly in the form of exemption from interest on deferred payments for construction and to a considerable extent also in failure to collect payments due on construction. Time permits only casual reference to the activities of other countries in these regards, but it is sufficient to say that this process of stimulating the movement to the land is well-nigh world wide. Nearly all of the European countries have programs of reclamation which appear to be justified by the great pressure for land in those densely populated countries. Before the World War, Germany was actively engaged in the colonization of East Prussia with German farmers. England is the classical home of the policy of small holdings, yet since the war we have seen in many of the countries of central and eastern Europe policies developed for breaking up large estates and distributing them in the form of small holdings. Even when these policies do not involve a formal subsidy, they do involve various aids in the form of easy credit and

other Government services. This world-wide tendency to make it easy for men to become farmers and to occupy new farming areas has been unquestionably an important element in the tendency for agricultural returns to be low.

These forces for stimulating the expansion of the agricultural area continue to operate despite the fact that we have a surplus of farm products and that our agriculture is suffering from a world-wide depression which has continued for many years. Coupled with this tendency to overexpand the farm land area are other powerful influences which aid in depressing returns from farming below those of other occupations.

Prominent among these must be placed the tendency to increasing efficiency in the production of farm products. Measured by physical production per worker, efficiency in farming has been increasing at about the same rate as efficiency in manufacturing and mining. Physical production per agricultural worker in the United States doubled between 1870 and 1920. This tendency is illustrated in still another way by our increasing crop and livestock yields. In the past 40 years the yield of corn in the United States has increased 4 or 5 bushels; the yield of wheat, 2 bushels; the yield of oats, 3 or 4 bushels; and the yield of potatoes, 25 to 30 bushels. Cotton yields, of course, have shown an opposite tendency because of boll-weevil depredations. There also has been a corresponding tendency to increased productivity of livestock, and students of the problem hold that the possibilities of elevating the general level of yields in this country have been only touched. If the scientific knowledge of production which the United States Department of Agriculture and the State agricultural colleges and experiment stations have developed during the last 50 years were applied generally in farming, further burdensome surpluses would result without adding another acre to the cultivated land area. From the point of view of the individual farmer increasing efficiency is always profitable and desirable but it must not be overlooked that increasing efficiency may harm farmers as a group if production is increased so much that gains made through efficiency are lost through decline in prices.

### COMPETITION IN AGRICULTURE

Then we must remember that agriculture is a highly competitive business. Not only does the American farmer compete directly or indirectly with over 6,000,000 other American farmers, but he competes also with millions of farmers in foreign lands. It is estimated that about 90 per cent of the products marketed by farmers of the United States are directly affected by foreign competition. The World War seriously disrupted European agriculture, but Europe

to-day, exclusive of Russia, has nearly recovered her pre-war production, while Canada, Argentina, New Zealand, and Australia continue to increase the production of products which we also produce. The possible complete recovery of Russia and the further development of the agricultural resources of Canada, Australia, South America, and South Africa bring the American farmer face to face with the prospect of increasingly severe competition in finding profitable markets for his products.

On the other hand, the farmer is confronted with the stubborn fact that the demand for many products of the farm is relatively inelastic, whereas the demand for the products of most industries seems almost insatiable. With the growth of populations and the increased industrialization of various countries, there, of course, will be the natural and normal increase in the consumption of farm products. It is also possible that we may be able to expand present markets for some of our products or perhaps find new outlets in densely populated countries whose economic and industrial development is just around the corner. There are also possibilities for broadening the industrial uses to which agricultural products may be put. While these possibilities hold out encouragement, yet it is a fact that during the past several years, American farmers have had to contend with a relative contraction of their home market. The partial substitution of tractors and trucks for horses on farms and the rapid disappearance of horses in cities have greatly reduced the area of land required for the production of horse feed. It is estimated, in fact, that since 1920 the curtailed demand for horseflesh has destroyed the outlet for the products of nearly 10,000,000 acres of land. During the past 40 years, there also has been a gradual decline in the total per capita consumption of food in the United States. The principal reasons assigned for this are the substitution of machinery for manual labor, better heated factories and homes, and the substitution of street cars and automobiles for walking. This tendency appears likely to continue for some time still, although perhaps in a modified degree. In other words, new and expanding wants absorb the constantly increasing output of industry, whereas the consumption of food products is quite definitely limited. The production of farm products per capita of total population in the United States is no greater now than 50 years ago, while the per capita production of manufactured commodities has doubled and that of mining has trebled in the same period.

The influence of all of these factors is strikingly reflected in the reduction not only of the area of crop land but of our rural population. It is estimated that there was a decline of about 500,000 in our farm population between 1910 and 1920. Since 1920, the net

loss in rural population is placed at almost 3,000,000. And the evidence seems to show that the movement away from the farms has not been rapid enough to prevent widespread disaster among farmers.

### LAND-SETTLEMENT POLICIES SUITED TO AMERICAN NEEDS

Such then are some of the special conditions which confront us in the United States and which are of basic importance when formulating land-settlement policies. What should be our land-settlement policy in the light of these conditions?

First and foremost, we need to develop measures which will prevent the present great reserve of potential crop land from being brought into use so rapidly as to cause chronic surpluses of farm products. Indeed, with the present outlook as it is, considerable land should be taken out of cultivation. If the adjustments needed to place farming on a profitable basis are to be left to free competition, perhaps we should even take steps to stimulate the cityward movement as we did the back-to-the-farm movement before the war. The wrong in the present cityward movement, of course, is that it is distressingly painful and costly, and there is danger also that it may result in leaving on our farms those who are willing to accept a lower standard of living.

Our policies with reference to the utilization of lands should be based on a thoroughgoing economic classification of available land resources, particularly in undeveloped or underdeveloped parts of the country. Not only would such a classification of lands make it easier to develop an effective reforestation policy without encroaching on areas which probably should be reserved for farming or ranching, but it would help minimize mistakes in the selection of areas for settlement and also supply a sound basis for the development of an effective settlement policy. Even if no further steps were taken by public authority to improve the process of land settlement, there is no doubt that private agencies operating with honest intentions would avail themselves of such information in selecting areas for development.

On the basis of a careful economic classification of our lands, it would be possible to apportion available land resources as between farming uses proper, grazing, and forestry, in keeping with the interests of established farmers and the needs of the Nation. Our once extensive forest resources are fast being depleted, and it is now important to devote a large area of land to reforestation. Federal and State reforestation projects should be extended and adequate funds made available for the purchase of lands of low agricultural productivity where there is little prospect of success in farming, but which would be suitable for the growing of forests. Favorable taxation and credit policies also would tend to promote the reforestation of some private lands now in farms or likely to be drawn into farming use.

COORDINATION OF FEDERAL AND STATE ACTIVITIES NEEDED

There is also needed a better coordination of all Federal and State activities concerned with the administration of public lands and the shaping of public-land policies in order that there may be more unified action in controlling the expansion of the farm land area and in effecting the most economic utilization of agricultural lands.

It has already been pointed out that most of our land suitable for the creation of new farms outside of existing farming areas is under the ownership of private individuals, railroads, large lumber companies, mining concerns, etc. Furthermore, most of the activity in organized land settlement in this country is at present carried on by private initiative. Although there are a few high-grade private-land settlement concerns which are pursuing a fairly enlightened course in the process of land settlement, it is common knowledge that the business as a whole, as now conducted, falls very far short of conforming to high standards of public service. At the present time, in fact, a large volume of land is sold by systematic deception.

It is important to recognize that at the present time the law of fraud and the courts give comparatively little protection against the exploitation of prospective settlers. The exploiting firms are sufficiently clever to keep within the letter of the law, and even where gross fraud is practiced the average victim is so ignorant of legal procedure and business practice and so lacking in resources that he is unable to prosecute his case. While the Post Office Department exercises jurisdiction over the mails, it has not been found that that power has been exercised very widely to eliminate the prevalent practice of selling lands fraudulently. Furthermore, most of the harm is done not by concerns which violate actually the law of fraud under its present narrow interpretation but by concerns which, though avoiding actual misstatement, manage by clever and subtle suggestions to lead the victim to purchase land which is unsuitable for farming, or to purchase it in quantities which are not favorable to success, or at prices which are excessively high—conditions which make for failure from the outset.

Not infrequently the land-selling agency itself is misled as to the possibilities of its own enterprise. The typical land promoter is characteristically an enthusiastic person who is likely to be carried away by his own enthusiasm, and he is very likely to be lacking in a broad perspective that would enable him to judge of the actual possibilities of successful agriculture in the project which he is promoting.

Furthermore, the business of land settlement, as conducted by private initiative, is subject by its very nature to all the evils of

excessive competition. As already suggested, the large area of physically potential agricultural lands which is in private ownership, subject to heavy carrying charges for taxes, interest, and other expenses, results in a constant tendency to push such lands into use. The excessive competition leads to high-pressure salesmanship and frequently compels the firm to appeal to a class of would-be settlers who are virtually lacking in capital and in promise as efficient farm managers.

Land settlement is an economic function that is vested with a large measure of public interest. It is a vital function and will be increasingly so when it becomes desirable and necessary to expand our agricultural area in order to meet the needs of our increasing population. The State is also concerned with promoting equality of opportunity and particularly with promoting a successful and stable agriculture. A condition in which the movement to the land is subjected to the predatory activities of fraudulent or near fraudulent land companies and to almost equally harmful and ill-considered schemes of land promotion and settlement should not be tolerated. Either the business of private land settlement should be raised to a much higher plane of efficiency and service or the State itself should take over the function.

### HIGHER STANDARD OF LAND SETTLEMENT ESSENTIAL

How, then, can a higher standard of land settlement be developed while still maintaining the principle of private initiative?

In the first place, the State might seek to promote higher standards by merely providing a service agency to assist private land-settlement agencies in investigating the possibilities of successful settlement and in supplying information to prospective settlers. It is my belief that such a policy would not get very far in meeting the situation. The well-intentioned private enterprises might avail themselves of such a service, but it would afford no protection against those agencies which are largely responsible for establishing and maintaining the low level of standards which now prevails in the business.

On the other hand, the Government might adopt a policy of selecting sound private land-settlement projects for recommendation to prospective settlers. For such a policy to be really effective in controlling the methods of land settlement and promoting the security and success of would-be settlers, it would be necessary for the Government to attract to itself a sufficient volume of inquiries from prospective settlers to give it some measure of control over land-settlement agencies. If a large proportion of the prospective settlers

could be induced to turn to the Government for advice and assistance in locating themselves, that very situation would give the Government a whip hand in compelling the private agencies to conform to higher standards in order to receive Government approval and recommendation. It is possible that a vigorous policy of advertising on the part of the Government, combined with the demonstration of actual service in aiding people to select sound opportunities, might be employed successfully to raise the general level of practice in land-settlement enterprises. It is doubtful, however, whether such a policy would meet all the needs of the situation, particularly whether it would deal with the problem of oversupply and excessive competition.

Personally, I should prefer to deal with the problem by this method if it should prove feasible to attract sufficient demand from prospective settlers for assistance to enable the State to control the situation. If this should prove impracticable, however, the only alternative, while preserving the principle of private initiative, would be regulation under some form of licensing. I realize that the idea of regulation is repugnant to the average American and particularly that the idea of applying regulation to the business of organized land settlement would be likely to excite very active opposition and a large amount of antagonism by powerful agencies interested in the promotion of land. But it is entirely possible that we may be forced to come to this not only as the means of establishing a higher standard of practice in promoting land settlement but also as a means of restricting the rate of expansion in the interest of a more prosperous agriculture.

The alternative to private initiative in land settlement subject to State influence and regulation is State promotion and participation in land settlement.

Government participation in land settlement might be merely partial as a supplement to private activity or it might be substituted entirely for private initiative in land settlement. One of the principal arguments for partial Government participation has been that the Government can develop "model projects" which will tend to raise the general level of private-land settlement activities by serving as object lessons. It is exceedingly doubtful if this method alone would tend to eliminate the abuses in the business of land settlement. The pressure of competition for the sale of land is so keen and the motives for adopting and employing a low standard of practice are so strong that merely providing a good example is not likely to overcome these powerful influences. There are already in the United States a number of admirably conducted private-land settlement

projects, but these have not served to eliminate the bad practices of those agencies which are motivated by low ethical standards.

Sometimes the participation of the State is justified or is advocated for those types of land-settlement projects which involve extensive reclamation even when participation in all types of land settlement is not proposed, and throughout the world State participation in reclamation enterprises is perhaps the rule rather than the exception. Such participation often is proposed because of the fact that the project involves not merely the preparation and settlement of land for agriculture, but also a number of other interests such as the development of water power and drainage and flood control on a wide scale. There are probably a few enterprises in every country of such magnitude and wide scope and involving so many interests, some of which are essentially public in character, that they can not well be left to private enterprise. However, it should be noted that by far the greater part of reclamation in the United States has been carried on by private initiative. In fact, for the most part the more desirable opportunities were exploited by private initiative, leaving to the State to a large extent the more doubtful projects. It is entirely probable that private initiative will take hold of legitimate projects which give some reasonable promise of success. The tendency, therefore, is to turn to the Government to build projects which private enterprise could not profitably undertake. There are unquestionably nations in the world so situated that they are justified in carrying on a public policy of reclamation, even at some loss. For instance, this may be the case in some of the European countries which are so densely peopled that they find it difficult to provide employment and means of livelihood for their people. Broad considerations of economic, social, and military policy, therefore, may justify such nations in engaging in reclamation as a means of increasing the available land area. The United States, however, is not in this position.

In all, except a few outstanding projects of great magnitude, it appears exceedingly doubtful whether there is any great outstanding national advantage in governmental participation in reclamation. Private initiative, I believe, could be relied on to carry forward legitimate expansion in this regard, although private initiative in this respect, as in other forms of land settlement, probably requires some type of regulation. If governmental participation in land settlement is scarcely justified in reclamation, it would seem to be even less justified in those forms of land settlement in which large scale reclamation is not involved. In short, the extensive participation by the United States, under its special circumstances and conditions,

in the business of land settlement appears warranted only in case it should prove impossible to correct the evils of private land settlement activity by some form of influence or regulation.

The time undoubtly will come when the pressure of population will make it desirable and necessary to bring into cultivation large bodies of land in the United States now producing little or nothing. It may then even be found necessary for the Government to take an active hand in helping to expand the farm-land area. The production problem now confronting American agriculture, however, is not how to increase but how to reduce burdensome surpluses that depress prices below profitable levels. The adoption of a constructive land policy under which lands will be used as needed for the purposes to which they are best suited will be a long step forward in helping to place American agriculture on a profitable and stable basis.

Mr. TEAGUE. I should like Mr. Cattanach to tell us a little more about the Australian system.

Mr. CATTANACH. Probably I did not make myself as clear as I should have done, and you can understand that, in dealing with a subject such as this, it is very difficult to bring it down to a focus that you can work with in a public meeting. But in Australia first of all we have nationalized all water supplies; every river, creek, stream, lake, marsh, pond, and the water therein is the property of the Crown. No one can take a gallon of water for use without the consent of the Government or some governmental authority, such as the body I am connected with known as the water commission. That water is used for two big purposes; one is for the supplying of water for domestic and stock purposes; that is, for the use of man and his stock.

Before a district is formed, meetings are held or petitions are circulated and there is a general application or a fairly general application for the construction of works to supply water for domestic and stock purposes. As soon as that district is constituted the commission values the lands, which is roughly 5 per cent of the fair selling value of the land. Against that valuation every landowner once a year has the right of appeal. If he considers that the land is too highly valued, he has the right to approach a very simple court where there is no real need for any great legal talent, and he has the right to state his case and to state reasons why the land should be valued for less. Out of some 21 years' experience I do not believe we have had more than 20 cases go to the courts.

Now, on that valuation as fixed, the commission levies a rate in accordance with the valuation. After that rate is fixed the commission supplies each landholder with as much water as he likes to take for domestic and stock purposes. The rate is based on the cost of the works, redemption, interest, depreciation, if any, in connection with the works, and the operating expenses; and each landowner within that constituted district has each year to pay that rate whether he uses the water or not. The object of that is to really save the landowner against himself, and for that reason after that

rate is fixed, based on the value of the land, the commission fills tanks of from 20,000 to 50,000 cubic yards for the same cost as we would supply water for regular use, and we urge the farmers to put down tanks for the storage of water, and try to create a sentiment that they should guard against dry spells by putting down tanks of sufficient size to carry them from one year's end to the other. We have found in that particular portion of Victoria that I am alluding to that something like 250,000 cubic yards are necessary for each square mile of holding.

As I mentioned before, the particular scheme, which is a sample of the domestic and stock system, is one known as the Wimmera-Mallee system which consists of 7,000,000 acres through which channels of a length of 5,000 miles are run in the cold months of the year, where water is carried from what might be termed the wet south of the mountains and run in some cases two and three hundred miles in the dry north. The result is that in that particular area we have something like 100,000 people living, where I suppose before the provision of water there probably would not be more than one or two thousand. That is the domestic and stock system.

We have, as you can understand, very many landholders in that area and a great many problems to contend with, but they all seem to work out fairly well in the end.

Now, on the other side, that of irrigation, we adopted in the early stages practically the same procedure. We do nothing in connection with the constitution of a district until there is a fairly unanimous demand for the supplying of water by means of irrigation channels. The land is closely examined by experts who know the possibilities fairly well of land under the application of water for irrigation, and assuming that a reasonable majority of the landowners are in favor of the constitution of a district, the district is formed. When that district is formed a register is made of lands within the irrigation district. In that register we set out the name of the holder, the name of the landowner, the area of his holding, the portion of the land that we consider too high to be reached by gravitation from the channels, the portion of the land that we consider unsuited to irrigation, and on the balance which we consider suitable for irrigation we fix a water right which the landowner has to pay for whether he uses the water or not.

Now, in connection with that land register, which is, as you understand, the basis of our work and a very important document, the landowner has the right once a year to appeal against the description. He may say that we have not excised from the watered land sufficient land; that there is marshy land beyond what we stated and more high land than what we found. For that water right we

charge so much an acre-foot. The general water right in most districts is an acre-foot of water to each acre of land. In some districts where the holdings are much larger and where they are not desirous of entering into altogether intensive cultivation we start out with a comparatively low rate, and it may remain at that rate for some years until a majority of the farmers in that locality apply for a greater allotment.

In addition, there is a small rate known as the general rate, based on 5 per cent of the fair selling value of the land so as to catch those landowners who are not using water for intensive farming but who are using water more for domestic and stock purposes. Those two rates combined are sufficient to return interest on the cost of works, redemption and depreciation, and also operating expenses. So that in an irrigation district we allot a water right according to what we believe is a fair description of the land, which is 1 acre-foot of water to each irrigable acre, 1 to 2, 1 to 3, 1 acre-foot to 4 acres, and in some cases 1 acre-foot to 5 acres. That has worked with us fairly well. In addition, there are fairly large areas of land which we subsidized and on which we placed closer settlers and supplied them with water for irrigation. Taking our close-settler irrigation district as a whole we find that as a matter of experience there are now 20 families living where there was only 1 family before.

Mr. TEAGUE. I should like to ask whether or not this water right becomes permanently attached to the land?

Mr. CATTANACH. The water right, once a district is formed, is insoluble from the land. You can not sell the water right without selling the land, but when you sell land in an irrigated district that carries with it this water right. Of course, there are exceptions.

Mr. HARDISON. You described land to which an assignment of one-fourth or one-fifth of an acre was made, or, in other words, 1 acre-foot to 4 or 5 acres. Now. the use of water depends upon the character of the agriculture. As a country develops the type or character of the agriculture changes, the demand for water increases. Now, what provision is made for an increased allotment for a given property due to later development? In a country that is highly settled, where the property is privately owned, what hope does the property owner have of being within or a member of the district or having his property excluded, and when once in is he always in, or once out always out?

Mr. CATTANACH. In regard to the first question, when we allot 1 acre-foot of water to every 3 acres of land, taking a district using only a moderate quantity of water, provision is made in that case and in all other districts for the landowner to obtain an additional quantity of water at the same rate per acre-foot as his water right.

For example, if his water right is charged for at $1.50, that landowner has the right to obtain another acre-foot for an additional $1.50, or, if he took 2 acre-feet, $3 additional.

In a new district just started we recognize that it is to many a new departure and a new system of production is necessary. But as a matter of practice, even in a district that we believe should eventually become an intensively cultivated district—that is to say, with at least an acre-foot of water for each irrigable acre—we start off by giving only 1 acre-foot in 4, 1 in 2, or 1 in 3 until we finally get 1 acre-foot in 5. But in addition to that there are the cases mentioned by you where we have started off, run for some considerable time on a basis of 1 acre-foot for 5 acres, and the landowner, by improved methods or by altering his views in regard to production, desires to have an additional supply of water. Then provision is made that in such cases, without altering the provision of 1 in 5 to the district as a whole, additional water is provided for more intensive use than the general body desires, and that water right is just as lasting and just as good as the original water right attached to the land.

Now, in regard to the other question. When we come into a district where there have been a number of people with large holdings doing fairly well we make a practice of coming as the helper instead of being aggressive and pushing ourselves on them. But first of all we try to guard against any friction by not coming into a district until there is a fairly good majority in favor of the commission establishing an irrigation district, and when I state a large majority I mean three-fourths or thereabouts. There are cases where a large landowner has been doing very well at dry farming but where his neighbors are desirous of changing the system of dry to wet farming. That does present some difficulties, but we have endeavored, first of all, to overcome these by buying out the large owners at a reasonable price. If they are in one corner of the district and will not go in, we exclude them altogether from the irrigation district. After the large landowner has seen the benefits of irrigation he has applied to come in, and in many cases we have taken him in. Once in, always in; once out, it is very difficult to get in.

Mr. Mason. What method is followed to obtain money to make these improvements in these districts?

Mr. Cattanach. Although we are a body with a fairly independent action, we have to go to Parliament for funds if we have not sufficient money to carry out any scheme. Parliament has power over the commission, and they are particularly careful not to agree to any scheme unless it is supported by a report from our water commission that we believe it would be successful. So far we have charged 4 per cent interest on the cost of works, with a sufficient redemption fund to get out the cost of the works in something like

56 years. In addition to that, where there are pipes or machinery or other perishable structures, we add a sum varying according to the nature of the work to meet depreciation. A rate is levied each year or an irrigation charge is levied which is sufficient to meet that interest, redemption, depreciation, and cost of operating. In connection with closer settlement, where we purchase the land, we allow the settler 36½ years to pay for his land. He must reside on the land himself for 5 years. At the end of 6 years, with the consent of the Government, he can obtain a mortgage on his land from outside sources, and at the end of 12 years, if he has paid up everything, he can obtain the fee-simple title to his land, which is somewhat different from perpetual leasehold. But we find there is with our people a very strong desire that they should in the end own their own land, and therefore if, at the end of 12 years, all advances and all land payments are made, a settler is entitled to what we call a certificate of title—a freehold title.

To meet the needs of settlers we make advances to them to erect small but comfortable houses. We make advances to grade and fence land, and, in general, to make improvements which we believe will add to the value of the land. Those advances are made only under the advice and control of the adviser, who with us is one of the most important officers that we have connected with our closer settlement organization.

Mr. TEAGUE. I presume the water commission has complete discretion as to where that water goes. In other words, there might in one locality be an excellent piece of land developed or settled that could be made much more desirable by the use of water, but it might be located at a long distance from the supply, while close to the supply might be a piece of land that is of equal value but is practically unsettled. Now, what do you do in a case of that kind? What I am trying to find out is this, whether the water should be used on property that has potentialities or be used on properties at a greater distance that are already partly developed.

Mr. CATTANACH. I don't know that we have met many cases of that sort, but I can say that it would be considered whether it is going to be more profitable to the landowner himself or to the State as a whole. In Australia, although we have a fairly good supply of water, and although we are making very big efforts to conserve all the water we have got, there is no doubt that the extension of irrigation is not limited by areas of land ownership; it is limited by the quantity of water available. We have more land than water, and therefore it is necessary to put that water to its highest use and use as far as we can lands which will give the better return.

Mr. JENSEN. A question arises in my mind. You start out with a proportion per acre and as the agriculture intensifies you increase

the water right per acre. I should like to know just how you do that. Have you appropriated all the water for a certain project; and if so, how can you increase the water right per acre as your agriculture intensifies?

Doctor MEAD. I believe I can answer that. You must remember, first, that the water belongs to the Government; riparian rights do not exist. They have been completely abrogated. Settlers do not have and never have had the right to appropriate water as we do. All that they can acquire is a license which may be for a single year or longer, and whatever unused water there is is absolutely the property of the Government, which can use it in any way it pleases. For example, the Government can use it to enlarge existing water rights or can apply it to new lands.

Professor HUNT. I will ask Mr. Manchester to tell us something about the Dawson project down in Queensland.

Mr. MANCHESTER. A big project under construction at the present time, called the Dawson Valley project, contains 300,000 acres. At the present time, the settlers are receiving blocks dependent on the natural flow and storage in big pools. It is a common thing in central Australia to have big reservoirs in the beds of the streams; they are not torrential, and, in the meantime, they are providing water from what might be called the storage of the river itself. They have a small weir and are building a dam at a place called Nathans Gorge, named after the ex-Governor of Queensland, Sir Matthew Nathan.

The ultimate idea is to bring in about 300,000 acres, but at present they are developing only about 30,000. The central district of Queensland is about on the Tropic of Capricorn and we expect great results from farming. The land is held on the perpetual leasehold.

No cash is required to purchase land, but a settler is required to have a certain amount of capital and experience before his application for land will be accepted. The government goes in on a 50–50 basis with him in improving his land. As a matter of policy the Queensland government wants to develop its State and the perpetual leasehold system is giving the poor man a better chance to make good.

The commission has established a particular type for buildings so that a hencoop can not go on one man's block and a fairly decent house on another; there is a uniform system of buildings.

Experimental farms have been in operation for two or three years showing great results, while the channels are being developed and everything is being done to help a man there. He has to pay on a 50–50 basis, as I have stated, for his stock and implements, but as for any permanent work, it is all put in by the government, constructed by the government—channeling, reservoir building, and pumps. The maximum to any one settler is generally £500. Of course this

amount may vary according to a man's experience and the nature of the crops he desires to raise or the use to which he is to put his land. Low rates of interest on advances and easy terms of repayment are fixed by the commission.

Mr. TEAGUE. Is there any stated price which these people pay annually for this leasehold?

Mr. MANCHESTER. There is an annual payment which is fixed at approximately 1½ per cent of the unimproved capital value of the land.

Mr. TEAGUE. Suppose a man dies, does his widow get his property or leasehold right or does it revert to the original scheme?

Mr. MANCHESTER. Lands are held on terms of perpetual leasehold, and the original lessee and his rights hold the land in perpetuity, and while all the conditions of the lease are complied with that leasehold can not be taken away from him or canceled. Should a man die his lease can not be sold for the first five years, except under certain restrictions. After five years, the leasehold may be sold with the approval of the commissioner, but in no case at a higher rental than the original lessee was paying, although he may get the benefit of whatever improvements he has placed on the land. He can not deal in the water right; that is something that belongs to the government and the right to that can not be set off to anybody.

Mr. TEAGUE. Suppose he plants orchards, for instance, and goes in for intensive farming which has a higher earning power than other lands. Does he get that increment through an increase in value?

Mr. MANCHESTER. All that is his except the water right. The water right is inalienable and belongs to the Crown only.

Professor HUNT. I wish you would explain just what the limit is that the government will advance to any one settler.

Mr. MANCHESTER. £500 as a rule, although this amount may vary.

Adjournment.

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## *Tuesday Morning, April 12, 1927*

*Topic: "Government Aims and Methods in Reclamation" (Continued)*

*William Cattanach, Presiding*

The session was called to order at 9 o'clock by the chairman.

## *IRRIGATION PROJECTS AND SOME PROBLEMS CONNECTED WITH RECLAMATION*[1]

*By José Mares*

*National Commission of Irrigation, Mexico*

In Mexico irrigation is a necessity because rain falls irregularly in some regions and very seldom in others. Our northern and some central States constitute a dry zone, their agricultural production being very poor and the lands bare and desert. In the populated districts, the abundance and scantiness come by turns and the inhabitants are exposed to these contingencies. In other Mexican States the waters must be governed for their convenient distribution. This is the reason why the Mexican Government established the national commission of irrigation for undertaking irrigation work with the best efficiency. Gen. Plutarco Elias Calles and his Secretary of Agriculture, Engineer Luis L. Leon, submitted to the Mexican Congress, in the latter part of 1926, the irrigation law that was passed. According to that law, the national commission of irrigation is invested with sufficient autonomy to perform its task. President Calles and his Secretary of Agriculture are in constant and intimate contact with the commission.

The Mexican irrigation law declares that irrigation of private property is a public utility; that irrigation must be developed not as an end, but as a means. The end is social, to bring about better comfort and wealth for the people by assuring abundant agricultural production to satisfy their needs and to acquire what is necessary for their maintenance and recreation by selling the excess.

In reaching this social end, the watering of the land is but a step. When irrigation studies are made, other investigations must be conducted at the same time concerning the soil's productivity, in order

[1] Data on irrigation projects have been taken from a report by Engineer Javier Sanchez Mejorado, member of the national commission of irrigation.

to find out whether the investments on the project will be repaid as well as the efforts of the future farmers. Then studies must be made in regard to the division of irrigated land and its productive capacity for rendering a maximum profit. And we meet here the factor "man," a most difficult problem to solve, and the principal factor in any enterprise. If anyone is making good, the business may nevertheless become a failure by changing the manager. In the same way the most productive ground will not yield anything if its cultivator does not wish to or can not work it successfully. That means that we must be careful in carrying out our settlement program. As a complement to our irrigation works we are giving attention to better means of communication between the production centers and the markets in the great cities and the industrial centers of foreign countries. In addition to the foregoing, the national commission of roads is building several good roads in different regions, and these will cross our country in many directions.

The colonies of our irrigated lands will have the necessary technical service, and the Mexican Government will establish experimental schools of agriculture, as has already been done in the States of Michoacan, Guanajuato, Hidalgo, and Durango. In every irrigation project we will have an investigation and demonstration field. These colonies will include cooperative societies of production, credit, and sale. At the present time one national bank of agricultural credit and four agricultural banks for the Ejidos have been founded by the Government. These banks furnish money; the former for rich and poor farmers, and the latter only for poor farmers who wish to constitute cooperative associations with unlimited, united, and strict responsibility.

## PROJECTS UNDER CONSIDERATION

The national commission of irrigation studies its projects in two different ways: One from the standpoint of civil engineering; the other from that of agronomy. The first seeks to discover land that is sufficiently extensive, so that irrigation can be made profitable; and studies the physical possibilities of the captation, conveyance, and distribution of water. The second investigates the cultivatability of the soil, ascertains what kind of products can be obtained from it, the future program of farming, etc. When the preliminary studies have been made, the national commission of irrigation, taking into consideration the economic possibilities of the project in question, decides whether future investigation is necessary. These final studies indicate whether the irrigation work should be carried on. The commission has made reconnaissances of the following projects:

Lower California—Santo Domingo and San Quintin; Sonora—Mayo and Yaqui Rivers; Chihuahua—Conchos and Papigochic

Rivers; Coahuila and Nuevo Leon—Salado River; Tamaulipas (Santa Gertrudis)—Mante River and Juan Capitan; Durango—Guatimape Lake, Tunal and La Sauceda Rivers; Aguascalientes—Santiago River (Calles's project); San Luis Potosi—Colimote; Hidalgo Mezquital Valley, Endo; Jalisco—Chapala Lake; Guanajuato—Lerma River; and Michoacan—Rio Gr nde de Tepalcatepec.

*Lower California.*—This territory is too dry. The coast valleys offer the best climate for agriculture; but they have no permanent streams, except the Colorado River. It rains in winter. Irrigation is possible only by building big dams for storing the water of the streams when there are floods, in order to have enough water in the dry years by using the excess of the wet periods. Besides the Tijuana River, which receives part of its water from the United States, the principal stream we have there is the Arroyo de Santo Domingo, which has a hydrographical area of 2,400 square kilometers, and carries 62,000,000 cubic meters of water, on an average. These waters can irrigate the San Ramon and San Quintin Valleys and the Camalu coast. There are probably more than 30,000 hectares that can be irrigated; but there is not enough water nor a suitable site for a dam.

Upstream from the Santo Domingo mission a site has been found; but the building of the dam would be too expensive. The proper rock for foundation is 19 meters below the surface. Sixty-one meters should be the height of the dam for a reservoir of 90,000,000 cubic meters. The dam should be built strong enough to resist the floods of more than 2,000 cubic meters per second; 9,000 hectares only may be irrigated in San Quintin Valley. The cost of irrigation works would be 900 pesos per hectare, which is too high; but we are studying the cost to see if it can be reduced.

*Sonora* (*Mayo and Yaqui Rivers*).—The northwest region of Mexico is destined to have a brilliant future. There are extensive and fertile lands parallel to the coast of the Gulf of California and the Pacific Ocean. The climate is very appropriate for agricultural purposes and there are good natural harbors. The Southern Pacific line of Mexico runs from the north to the State of Jalisco, and it will unite this zone with Mexico City and the central States. The Mayo Valley has its own railroad, which runs in the same direction as the Mayo River as far as Yabaros Harbor. Irrigation was established there many years ago. The river during the rainy season has a great deal of water and its torrential waters are lost without anyone profiting by them. The river has about 700,000,000 cubic meters yearly, which could supply 80,000 hectares by building a storage dam near Mocusari, a little downstream from the confluence of the Arroyo Quiriego and Mayo Rivers. Far from here downstream, in the same Mayo River, near Tesia, can be built a diversion dam and canals for conveying the water through the irrigated lands.

The Mayo and Yaqui Valleys are quite near. The amount of water in the Yaqui River is six times that of the Mayo and can irrigate all the lands between the two rivers. In accordance with this project, a system of drainage could be established. At the same time a hydroelectric plant of 15,000 kilowatts must be built. The cost of the project will be, more or less, 22,000,000 pesos, or 277 pesos per hectare.

*Chihuahua* (*Conchos River*).—The principal Mexican tributary of the Bravo del Norte River is the Conchos River, whose hydrographical area is 17,460 square kilometers.

Near Santa Rosalia, in the place known as La Boquilla de Babizas, there is a dam on the Conchos River that stores 3,150,000,000 cubic meters. The Compania Agricola y de Fuerza Electrica del Rio Conchos uses the water in the development of hydroelectric power; the water runs regularly to the amount of 35 cubic meters per second.

Engineer B. Enriquez has studied a project for using these waters for irrigation purposes. According to this project 55,000 hectares would be irrigated by using these waters and those of the San Pedro River.

Señor Enriquez's project calls for a conveying canal 55 kilometers in length before reaching the fields to be irrigated. The national commission of irrigation is now studying a less expensive solution.

*Chihuahua* (*Papigochic River*).—Near Minaca, on the Northwestern Railroad of Mexico, there is a site for a dam whose storage would irrigate the lands of Ciudad Guerrero on the left side of the river and the fields of Santo Tomas on the right. A hydroelectric plant would be able to raise water up to the Mesa de Minaca. Some civil engineers contend that there is a physical possibility against watering 24,000 hectares; but our agronomic department establishes the fact that there are no more than 10,000 available hectares. The work of this project has not yet been finished.

*Coahuila and Nuevo Leon* (*Salado River*).—This is another of the principal tributaries on the Mexican side of the Bravo del Norte River. There is a site for a dam near the place called the Don Martin House, close to the point where the Salado River passes from the State of Coahuila to the State of Nuevo Leon.

The reservoir has a capacity of 1,200,000,000 cubic meters. The river, on an average, takes an amount of water of 900,000,000 cubic meters yearly. The dam, which will be about 30 meters above the bed of the river, will be built on stratified limestone. The top will be 970 meters in length. The irrigated lands have more than 50,000 hectares. The budget, more or less, is of 10,000,000 pesos and the cost per hectare, for engineering work only, is 200 pesos. This dam is in the construction period.

*Tamaulipas* (*San Juan River*).—The San Juan River is the third important tributary of the Bravo del Norte River. We are studying the possibilities of storing the water in a place named Santa Gertrudis. We have not yet definite data on this project.

*Tamaulipas* (*Rio Mante River*).—This river is an important tributary of the Tamesi River not very far from Tampico. We are building a diversion dam and two canals for irrigating 10,000 hectares. It seems to me that this work will not take more than 1,000,000 pesos.

*Tamaulipas* (*Juan Capitan*).—The preliminary reports on this project are not so good and we have abandoned the idea of it, taking into consideration the fact that there are many more important streams in the State of Tamaulipas.

*Durango* (*Guatimape Lake*).—In the State of Durango there is the Guatimape Lake, with a capacity of 220,000,000 cubic meters of water that could be used advantageously for irrigation purposes in a part of the lands formerly belonging to the same lake, and, perhaps, in part of the Nazas River Valley after joining the San Juan del Rio River and after power development in the Cathedral Rock, a wonderful old fault 4 or 6 meters wide by 100 meters high. At the present time we are making some drillings in this canyon in order to ascertain the geological conditions of the subjacent rocks.

*Durango* (*Tunal River*).—We are making preliminary studies on this stream.

*Durango* (*La Sauceda River*).—We are studying the details of the agronomic conditions of the soil and the engineering works. We will irrigate at least 5,000 hectares in good economic conditions. We have finished the drillings in El Aguila Canyon, and the rock of subsoil is strong enough for the foundation of the dam. This curtain will be 19 meters in height and will store 19,000,000 cubic meters of water.

*Aguascalientes*.—Calles's project on Santiago River. Gen. Plutarco Elias Calles, President of the Mexican Republic, initiated the study of this great project, a very important one for the extension of the irrigated lands, not only on account of the easy communication, but because it is situated in a populated center, of which Aguascalientes is the principal city.

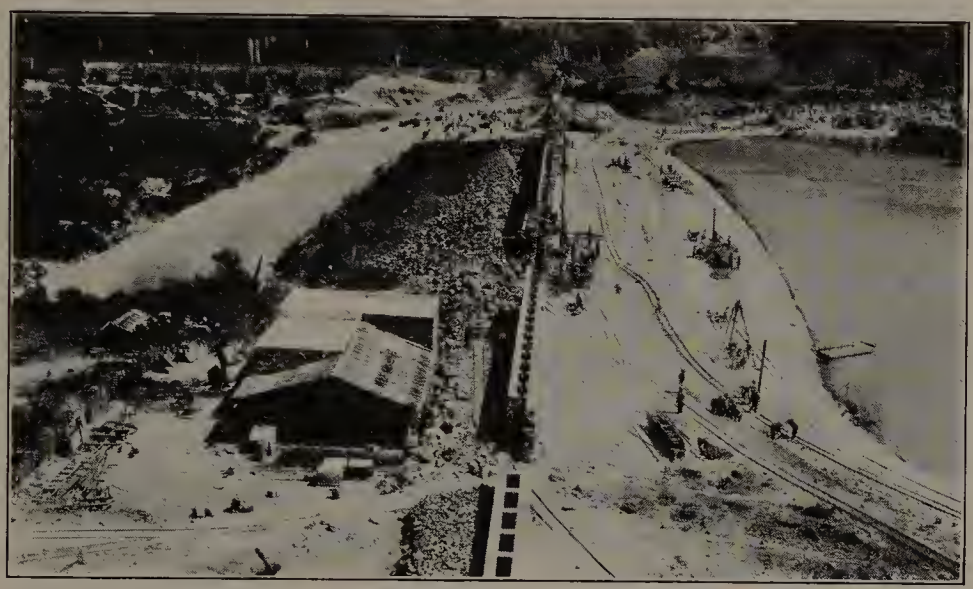
The reason why we have given the name of "Calles" to the project is because our President has worked so ardently in the cause of reclamation.

The storage dam will have a capacity of 320,000,000 cubic meters. We are studying the hydrological conditions of the San Pedro, Pabellon, and Chicalote Rivers for the purpose of uniting their waters with those of the Santiago River, and we shall irrigate 50,000 hectares at an estimate of 8,000,000 pesos. This project is in the construction period.

*San Luis Potosi* (*Colimote*).—This project is in the reconnaissance period.

*Hidalgo* (*Mezquital Valley*).—The Mexican Government bought from a private irrigation company the irrigation system of the Mezquital Valley in order to increase its extent. The national commission of irrigation has duplicated the capacity of the storage from 35,000,000 to 70,000,000 cubic meters of water. The work of building the dam has just been finished. In the same irrigation system are other conveying canals that take the water of the Salado River with all the residuum of Mexico City.

The commission has a project of enlarging this system much more by the diversion of the El Salto River to the reservoir of the Caltengo Dam, the name of the finished construction.



IRRIGATION SYSTEM OF THE MEZQUITAL VALLEY, CALTENGO DAM ON THE TEPEJI RIVER

In a lower region we may build another storage dam named Ulapa, which we could use as an auxiliary storage.

*Hidalgo* (*Endo*).—This is a convenient site for building a dam of 500,000,000 cubic meters of water on the Moctezuma River for irrigating the lands of Chilcuautla, Ixmiquilpan, etc. The necessary investigation will be made later on when the works of the Mezquital Valley are completed.

*Jalisco* (*Chapala Lake*).—A private agricultural and power company, some years ago, built some dikes in Chapala Lake reducing its extension and dedicating the dry lands to farming. The company failed and the water overflowed the dike and the lake remains as before.

The Lerma River flows into the lake and the water flows out by the Santiago or Tololotlan River. The first has a capacity of 1,200

cubic meters per second, while the second has a capacity of only 250 cubic meters per second. Moreover, the flow of the Santiago River is frequently obstructed by great quantities of water lilies that abound there, making so very imminent the floods in the rainy season.

The Mexican Government has the project of finishing the works in order to avoid the floods, and to assure the irrigation of the dried lands and the drainage of the same.

*Guanajuato* (*Lerma River*).—On this river, upstream from Acambaro, there is a site for building a dam with a capacity of 500,000,000 cubic meters. The national commission of irrigation is working in cooperation with the Mexican Light & Power Co. for two purposes, namely, irrigation and hydroelectric power development. The drillings have now been finished, the line of the curtain is determined, and in a few days the construction works will start. Downstream from Acambaro we will build some auxiliary dams. The irrigated land will have an extension of 50,000 hectares.

*Michoacan* (*Rio Grande de Tepalcatepec*).—We have made some investigation of this river. We have two possibilities in this region: A diversion dam and canals for a little project, or one storage dam for a big project. Because of the fact that this region is very hot and there is much sickness there, the colonization is very difficult.

*Michoacan* (*Querendaro Valley*).—The national commission of irrigation, in cooperation with the department of waters of the agrarian national commission, has constructed some works of canalization in the Querendaro Valley for drying the zone. More than 4,000 hectares have been cultivated during this agricultural season.

In brief, the national commission of irrigation hopes to carry out the following irrigation projects in two years more:

| Projects | Irrigation surface | Budget | Projects | Irrigation surface | Budget |
|---|---|---|---|---|---|
| | *Hectares* | | | *Hectares* | |
| Salado River | 50,000 | $10,000,000 | Mezquital Valley | 18,000 | $1,500,000 |
| Mante River | 10,000 | 1,000,000 | Mayo (one part) | 50,000 | 10,000,000 |
| Guatimape Lake | 18,000 | 2,000,000 | Lerma River | 50,000 | 5,000,000 |
| Sauceda River | 5,000 | 1,000,000 | | | |
| Calles's project | 50,000 | 8,000,000 | Total | 251,000 | 38,500,000 |

In our irrigation projects, colonization has not yet begun. We have but little experience in this kind of work, but we hope to receive the benefit of your experience in this task by listening to your advice. Nevertheless, I have the pleasure of submitting for your consideration the following postulates concerning our reclamation problems:

First. We must develop little farms on the land owned by the nation in the irrigation projects, according to the irrigation law; but such farms must be productive enough to satisfy the needs of a family.

Second. The colonists will be entitled to the Government's agricultural teaching, credit, schools, and social life.

Third. The value of the projects will be that of the investments made in the same until the farms are delivered to the colonists.

Fourth. The value of the farms will be determined according to their economic conditions, such as production, distribution, and consumption of agricultural products.

Fifth. The colonists will pay the value of their farms in terms long enough to make their agricultural work possible and at the same time their lives comfortable.

Sixth. The colonists will be under the direction of our agents so long as the valu › of their farms is not redeemed.

Seventh. When all the colonists pay the value of their farms the irrigation systems will be under their dominion and administration.

Eighth. Cooperative action of the farmers will be stimulated in all our irrigation projects.

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At the close of the foregoing address Professor Krauss gave an interesting description of the difficulties and final success of a colony of homesteaders, of which he was one, on the island of Maui.

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## *PROPOSALS FOR THE SETTLEMENT OF RECLAMATION PROJECTS*

*By E. J. T. Manchester*

*President of the Water Supply Board, Brisbane, Australia*

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I have the honor of submitting, briefly, for your consideration, the subject of proposals for the settlement of reclamation projects. My justification for so doing is the fact that I am an executive engineer, at one time engaged in irrigation projects in Victoria, Australia, under Doctor Mead and Mr. Cattanach, who were really responsible for the principles involved in my work, and which I as the executive engineer put into operation. These principles, although very liberal at the time, I now consider require further broadening, especially in countries where industrial and manufacturing pursuits flourish and are rendered so attractive to labor. The hours of the employee in industrial centers have been shortened, his wages increased, and other concessions made to him, without corresponding benefits being given to the man who works on the land. The hours of the latter are generally from daylight to dark and often more, and the same may be said of his wife and children. After working for months or perhaps a year he may finish up with wages nil or in debt, due to climatic and commercial conditions over which he has not the slightest

control. The man on the land should have at least the status and wages of a municipal laborer, whose hours and wages are generally fixed by statute or by award. In most countries the man on the land and especially his wife and children are usually martyrs to the well-organized vote of the big city population, who look after their own interests at the expense of the rural inhabitants.

Under such conditions it is idle to expect land settlements to be either popular or successful, except with a small population only, and with those few possessed of experience, endurance, and skill acquired after years of hardship.

*Aid to and direction of settlers.*—In Australia, in general, and in Queensland, in particular, during recent years legislation has been enacted to give the man on the land a squarer deal relatively—recognizing that all along he has had to pull more than his own weight.

Such legislation, however, is protected with proper business safeguards open to the full light of day, so that every prospective settler knows what to expect and what he has to give in return.

As a matter of public policy, in the interest of the welfare of the State and of the settlers themselves, assistance (advisory, financial, and technical) is now given by the State officials to make existence on the land more livable for settlers.

We have long enough and often enough heard that "a brave yeomanry, their country's pride, once lost can never be replaced," and similar sentiments from time to time in other language. Legislation in Queensland has anticipated such a deplorable result and is providing compensating advantages before it is too late. As prospective settlers are generally men of small means, settlement should be planned so that their limited amount of capital may go as far as possible. One indispensable condition is, however, that they should have some money, say, at least $2,000, and also proper experience and sufficient stamina and tenacity to get through. Settlers without such requirements will hardly make good, and are liable to leave the settlement in the lurch. They had far better be left to enter more attractive employment near the cities.

With a view to making the settlers' capital go as far as possible, in all cases of future development, the State should, if not already owning the land, resume the land from the present owners, and not leave it in the hands of private speculators to play fast and loose with the prospective settlers. The business life of the ordinary land speculator is too short and sudden for gambling with land from which settlers must derive their living. On that account in future projects all land tenure should be on perpetual leasehold, as in Queensland, no money being needed by the settler to purchase land, but leaving such money as the prospective settler has available for more pressing

purchases. A further indispensable is provision for cummunity recreation and field sports.

If the reclamation bureau or the department concerned has not at present the power to so resume and acquire land, the necessary legislation should be passed to give it that power, but absolute control over the land by the bureau or the department is, I consider, one of the most essential conditions for assured success. Perpetual leasehold, as the law provides in Queensland and as intended here by me, means possession by the settlers and/or their heirs in perpetuity, subject to fulfillment of the conditions of lease. The perpetual leasehold principle, besides giving the bureau or the State full control of the land at all times and without any real disadvantage to the settler, does away with the practice similar to a dog chasing its own tail, viz, where the State in its early days sells its forest lands for a mere pittance and resumes them later within a generation at probably an exorbitant value, to sell again to settlers and then resume again at a further exorbitant value, and so on. Of course it would be absurd to apply this principle to costly lands, but only to those lands which are of little value and which the State can obtain at nominal cost or already possesses. It is out of the question to apply it now to lands possessing a high value close to cities and towns; otherwise the interest charges will create a burden which the settler can not meet.

A further prior essential would be, especially for settlement on dry lands, a pure and sufficient domestic and stock water supply.

Other necessary conditions are, of course, suitable climate, sufficient rainfall or its equivalent by irrigation for wet schemes, fertile soils, appropriate crops, proximity to markets, and control of the whole of the production by the men on the land through cooperative associations and commodity boards so as to regulate famines and flushes.

*Repayment of charges.*—The charges payable back to the bureau or the department for the lease of the land for water supply for irrigation and for drainage if any, for road construction, and for channel construction, including maintenance, should be fixed by a fair charges or land court before applications are invited. In any case projects should not be rushed on to the market unduly, but should be provided only as the demands by bona fide prospective settlers require and not as pressure—political or otherwise—from time to time suggests. The project which has the best prospects of success on its merits and on no other basis should be selected and dealt with throughout first and put in proper operation before entertaining further projects.

The bureau or the department, before applications are received, should build the necessary roads or compel the municipality so to do before dealing with the applications, and also provide the necessary

channeling and grading; in fact, all works which might be considered of a permanent nature. For buildings, domestic and farm, clearing, fencing, stock and implements, the bureau or the department should advance, with proper safeguards, an equal amount provided by the settler on a 50–50 basis. All buildings should conform to standard types approved of by the bureau or the department. For permanent works, such as reservoirs, for example, the interest on the cost thereof should be capitalized. Repayments for the same should be spread over a period of say 50 to 100 years, depending on the estimated life of the works.

*Residence requirements.*—Personal residence by the settler himself should be another sine qua non for five years at least; thereafter leaseholds and improvements might be transferred in similar manner to freehold property. In case of death, insanity, permanent disability or illness before the first five years expire, the transfer should be back to the bureau or the department or to an agricultural bank provided by law by the bureau or the department for purposes of closer settlement and the making of advances therefor. This bank should also be empowered by law to make advances to primary producers' cooperative associations, and for advances to commodity boards for the purpose of cooperative production, cooperative marketing, cooperative manufacturers, and for cooperative supplies in the interests of settlers themselves or groups of settlers who should have authority under the law for controlling those primary producers' organizations or commodity boards. Further, the bureau or the department should before receiving applications have demonstration and experimental plots in operation, showing which are likely to be the most successful as regards growth and for marketing results. Everything should be properly thought out beforehand and systematically prepared and operated for the guidance of the prospective settler.

Before opening up new projects in any State those already there not on a satisfactory basis should be dealt with and revalued on the lines indicated. Land settlement and farming in most countries appear to be in a somewhat parlous condition and in the interest of the farmers themselves and of the nation as a whole every effort should be made for uplift to a higher level. If present legislation will not permit such assistance then the legislation should be amended, without sacrificing reasonable business safeguards. Furthermore, no new projects should be undertaken without complete investigation by all concerned, first severally and then jointly, viz, by the lands department, the reclamation bureau, the treasury department, and/or by the State agricultural bank if any. These safeguards, together with subsequent responsible construction, supervision, and control by the reclamation bureau, should, as far as humanly possible, assure

success, especially with the settlers' own organizations controlling the production and marketing of products.

To further amplify the proposals outlined, reference is made to the following:

1. An act to provide for the formation, registration, and management of primary producers' cooperative associations, and for other purposes incidental thereto.
2. An act to amend the primary producers' cooperative associations act of 1923, in certain particulars.
3. An act to consolidate and amend the primary products pools act of 1922–1925, and the primary producers' organizations act 1923–1925, and for other consequential purposes; and to amend certain other enactments in certain particulars.
4. The fruit marketing organization act 1923–1925.
5. An act to declare the law relating to rights to natural waters, to make better provision for the construction, control, and management of works of water conservation, water supply and drainage, and for other purposes incidental thereto and consequent thereon.
6. Speech by the Hon. W. Forgan Smith, Minister for Agriculture and Stock, on rural organization and the marketing of primary products.
7. Second annual report of the Committee of Direction of Fruit Marketing for year ended June 30, 1926.
8. Annual report of the Department of Lands for the year 1925.
9. Annual report of the Department of Agriculture and Stock for the year ended June 30, 1926.
10. Annual report of the manager of the State Agricultural Bank, Queensland, for the year ended June 30, 1926.

I trust my remarks will be accepted in the spirit offered and that those countries where the conditions for the man on the land are inferior to those in operation in Australia, in general, and in Queensland, in particular, will introduce legislation required to improve his lot and of those dependent on him. If the legislation is defective or insufficient it can not be expected that the results will be perfect.

Adjournment.

## *Tuesday Afternoon, April 12, 1927*

### *Round Table Discussion*

*William Cattanach, Presiding*

The session was called to order at 2 o'clock by the chairman.

The CHAIRMAN. Yesterday, Mr. Olson, in the excellent discussion which he gave to us, hinted at the idea of a "back-to-the-city movement." In other words, he seemed to be taking a negative view of the farm situation. It is hardly customary for a chairman to speak, but I feel that I should like to make a few remarks on this point.

Overproduction is a term I know that I have heard all my life. This term can be very loosely used and is one that I think can frighten many people. But on examination, I think overproduction rightly means faulty distribution. We had a striking example in connection with our canned fruits in Australia. Five years ago the consumption of canned peaches was about a tin per head. We adopted another course. We started a plan of advertising propaganda, and in five years we increased the consumption of canned peaches from one tin per head to six tins per head per population. And so, I imagine, it may be with every line of production. The Department of Agriculture, I think, should rather devote its time to suggest methods to increase production and quality of production rather than advise people to move to the city. I do not believe in emphasizing overproduction. I believe that a systematic, strong, and active system of improving distribution will reduce the cost of goods, leading to an increase in consumption. We should try to improve the quality of the goods that are produced. At present, there is a movement to produce by scientific methods a cheaper and better quality of products. This is noticeable especially in China and Japan where there is a movement to use a better class of foods.

Mr. MASON. I should like to read extracts from a report by the Commonwealth Club of California, entitled, "Conclusions from report on irrigation." The irrigation section of the Commonwealth Club adopted as their topic for discussion, "Is irrigation overdeveloped in California?" This summary reads as follows:

California is primarily an agricultural State and its future development, both agriculturally and urban, will depend primarily upon the rate and efficieney of its utilization of its water resources.

The irrigation district development alone in California is greater than that of all the Government reclamation projects, is more nearly settled, and has certainly been a greater financial success in that the farmers have paid their bills as they went along.

Should we encourage or discourage additional irrigation enterprises? It would seem that the answer to this question must be obvious. If the present developments are a success, if the growth and the future of the State depend on more developments now, it would seem obvious that additional irrigation enterprises of proper type should be encouraged. It is also true that because future projects will be more expensive the existing slack in the older and cheaper projects will automatically be taken up.

There are few outstanding irrigation securities at present on the market, and there is a good demand for more, and hence there is no reason to be apprehensive of difficulties in financing thoroughly approved projects in the future.

The future agricultural development in California will be mainly dependent on irrigation and an orderly progress in such development should be encouraged.

The following is an extract from the report of the irrigation securities committee of the Investment Bankers Association of America:

With all its shortcomings, irrigation remains one of the great fundamental reosurces of this country. The wealth produced amounts into totals equaled by few industries. It forms the basis of prosperity and business of many of our Western States.

Doctor MEAD. One has to understand the peculiar conditions of the arid region to determine whether the Government reclamation projects have increased the competition of farms in other sections or have lessened that competition. A strong argument can be made for the latter. In certain localities Federal irrigation works have been mainly important because of the help they have given in the development of other natural resources and the creation of a demand for farm products not grown under irrigation works but supplied by other scctions of the country.

In Arizona, for example, one of the most important crops is long-staple cotton. It does not compete with the cotton crop grown in other parts of the country because we have to import from Egypt a large part of the cotton of this character needed here.

On many of the projects the sugar beet is the main crop. It does not compete with the sugar beet grower in other sections of thc country because we need more sugar than we produce. Every new beet-sugar factory simply lessens the tonnage of sugar imported from outside countries.

In some States the local food supply of reclamation projects enables mines and other industries to live which could not do so if food supplies had to be imported from outside. Because of these facts the West believes that there is a special need for irrigation expansion

to insure the stability, growth, and prosperity of western cities, and doing this does not injure the farmer of the great agricultural region of the Middle West, but actually adds to the market for his products.

Mr. Olson. I tried yesterday to make clear in my paper that I was not holding a negative position regarding reclamation or irrigation. On the contrary, I think that the Department of Agriculture takes a very positive position, which I endeavored to bring out, when I said that the farmers are building a civilization. But you have got to have a strong foundation. You can not maintain profits in an industry if you go ahead and overexpand. But we are expecting to see an expansion in the area where the farmers have already worked. It is only within the last 8 or 10 years that we have swung away from production to distribution. By our old rating and standardization system I think that what we must do is to improve the quality of the foods produced by the farmers. The activities of the Government and the Department of Agriculture help to shape agricultural development. As a result of the research work, farmers all over the United States are becoming efficient producers, with assets instead of liabilities. Irrigation is of tremendous value in the West. The question in my mind is whether we should go ahead to develop at the same rate—that is, further expansion.

I do not see how these statements can be looked upon as negative in any way at all, when we are trying to help the farmers.

The Chairman. The question is, Can a settler in an irrigation district on a reasonably sized block make a living for himself and become an active participant in the civic life of the community? We have met overproduction by systematic distribution. It is unreasonable for one who has to grow his products to find markets and at the same time to take part in the affairs of the State. The matter of finding markets is each year becoming a more complicated problem. If these successful business men would try to assist in the formation of market committees, so that where the want is you will be able to supply the goods, the difficulty can be overcome. By a proper and orderly system of distribution the consumption can be increased.

Mr. Mason. I wish to read a statement from a letter of September 17, 1924, from President Coolidge to the American Mining Congress, as follows:

> Some minor criticism has been made as to the policy of our unremitting development of these projects by those who have thought we were already overproducing in agricultural products. They feel that these projects should be stayed until agricultural production has readjusted itself. These criticisms lie in the lack of understanding that these projects take many years for development, that they furnish but a small portion of the total increased food supply required even by our increase in population, that the utilization of their supplies lies in the development of the West itself. It is my purpose to unremittingly stimulate and encourage the development of these great projects by every a thority of the Federal Government.

We have every reason, in shaping those national policies which will affect this great section of the country, to keep our thoughts upon the future. A country growing so fast in population as is our own can not limit its considerations to immediate necessities. Many people now living will see this a country of 200,000,000 inhabitants. The national interest will be served by promoting the widest difusion of population. The national security, the best social development, the wisest utilization of natural resources—all demand this.

Mr. Olson. Demand for new area increases as the demand for food increases. The question is, Do we really need that new expansion? There hasn't been enough consideration of economic features. The difficult question to analyze is whether or not the Government should help the settlers if it wishes to insure their success. Most of the worthwhile lands are in private possession. My proposition is that the Government should go in and try to shape the problems and activities of the population who are already on these lands.

Mr. Teague. I am particularly interested in the development of the peach-canning industry as mentioned by our friend from Australia. Now, they have developed the consumption to six tins per head, but in so doing they have substituted peaches for some other food. Something has been substituted which is more desired by the people than what they were consuming. The big question, then, is to grow that for which demand may be created.

Doctor Mead. In this discussion of the economic wisdom of extending the reclaimed area through the construction of Federal irrigation works I wish to make clear that the Department of Agriculture has been and is being of great assistance in determining how far the Department of the Interior should go in opening up new areas. Its experts are relied upon for advice regarding soils and are sought to make economic investigations. The Department of the Interior wishes to place first the lives, the happiness, and the welfare of its people when it becomes responsible for the creation of a new agricultural community.

We have to be conservative because the pressure for new projects is strong. People look to the Federal Government for the rescuing of enterprises in difficulty and for the development of the latent resources of other sections, but we have before us the difficult question of what is needed to insure the success of settlers, because on this depends the solvency and value of these projects. I wonder if Professor Krauss will explain to us a little more what he knows of the experience of settlers and how he managed to secure $18,000 with which to put the homestead he mentioned on a working basis.

Professor Krauss. Before answering Doctor Mead's question, I would like to say a word about Stanford University. I am deeply interested in the work carried on in Stanford University, that is, in

the work of the food research institute which has to do with agricultural products. It seems to me that there ought not to be a single person not familiar with that work. I think that it was the first well-organized attempt to help us understand where we stand in the matter of agricultural products. I would feel as though I had not performed my duty if I did not call the attention of this body to this research work. Now to answer Doctor Mead.

One of the big features in success unquestionably is to have ample financial backing. If that is an important factor, how is it going to be provided? There are some things that the Government can do better than individuals. I believe that the Government can afford to back any homesteader to the limit if that man is earnest, for the chances are that if he gets such aid he can make good and instead of a liability will become an asset. I believe after the 10 years of experience that I spoke of, that, on an average, on a small farm of say, 40 acres, $5,000 carefully directed would put a man on his feet, that is, a man with the determination to succeed; $5,000 will carry him to a position where he can support himself. Financial aid must be given to a man who is going to homestead a small unit. My own case is perhaps fairly representative. I had the right kind of a family—four children, who all pitched in and helped.

I should like to ask a question in turn. I should like to know whether or not the demonstration farm and the farm adviser have realized expectations in Australia? Here, some say that the demonstration farm has no place, that it is not fair, while others say that a farm adviser has a place. We also hear the statement that the demonstration farm should stand on its own feet, be self-supporting, if it is to mean anything. We are divided into two camps.

The CHAIRMAN. In Australia we find room for both the demonstration farm and the farm adviser. We have a very fine demonstration farm situated in the irrigation district in Victoria. We invite farmers from all parts of Australia. Speaking generally, it has given great satisfaction. Every now and then we have favorable comments, and receive many visitors during the year, probably numbering thousands. A demonstration farm has its value not only in its successes, but it may have even greater value in its failures, in learning how not to do things. I would say to-day that it is growing in favor; that it is a most valuable asset. In addition to that we made a new experiment in equipping a better farming train. We have two most popular trucks—one is a cooking truck in which skilled instructresses give lectures throughout the country in cooking. The other, equally popular, is the baby-welfare center truck. Those two have made the farm train most popular in Australia.

(At this point the recapitulation of the postulates given in the morning by Señor José Mares on the subject, "Irrigation projects

and some problems connected with reclamation," was asked for. The paper was procured and Señor José Mares kindly reread it.)

Mr. MANCHESTER. I have been called upon to settle a dispute in Australia which involves the question of rainfall and run-off. I would like to benefit by the experience of some of the gentlemen present, if possible, in that connection.

Mr. TEAGUE. I believe that the maximum annual run-off is about eight times the average. However, it must be remembered that many factors must be taken into consideration, such as the topography, whether the soil absorbs the water, whether there is a cover of trees and brush, the rapidity with which the rain falls, and the duration of the rainfall. All of these things must be considered to determine the run-off.

(At this point there was a short general discussion by Doctor Mead, Messrs. Manchester, Teague, and Jorgenson, but no definite statements or conclusions were made.)

Mr. MASON. I should like to ask what method of finance is used in Australia in reclamation work. Does the Government issue bonds, and give the settler the benefit of a low rate of interest, or does the district itself issue bonds that are held by the Government?

The CHAIRMAN. If it is desired to form an irrigation district an estimate is prepared to tell what the cost would be. A charge for water for rating purposes would be necessary to return the interest on the cost of works, the redemption, the depreciation, and operating expenses. We will assume that the cost of any one scheme would be $500,000. A schedule is presented to Parliament stating the estimated cost of the scheme and what money would be required during the current year to close the scheme and to carry on a certain distance. Now, the Government borrows that money on the credit of the whole State. The securities of the Government are the reports and good reputation of the committees that represent the scheme. That money is borrowed at as low a rate as possible. Then the district is constituted. Water rights are allotted and every land owner within that district has to pay a certain amount whether he uses the water or not. That amount is to be sufficient to meet the redemptions, depreciations, and operating expenses. The districts have nothing to do with bonds. The only party that can issue bonds is the State authority and those bonds are secured on the reputation of the financial stability of the State itself.

Mr. MASON. In California just the opposite is true. Districts issue their own bonds and of 6,000,000 acres 4,000,000 are irrigation districts. However, in fairness, I will have to say that for some time I have felt that California will have to enter into some such a scheme as that practiced by Australia.

The CHAIRMAN. In a number of districts we started off by charging 4 per cent, and we are keeping to that, as we believe they entered into an understanding that we would levy or charge interest at that rate. Now, the danger, or difficulty rather, is that while we prepare our estimate the conditions may change to-morrow. For most of our new schemes we actually charge the full rate that the Government offers in the market. Then we reap the benefit of a better rural stability in the country. The prosperity of the State, if it can be fostered by a reasonable rate of interest, is well worth trying. But no bonds are issued by the district. The whole thing rests with the commission. If we recommend the project, the district is formed; it is charged with the amount of interest, and payment is made whether they use the water or not.

Doctor MEAD. When I went to Australia I was greatly interested in the irrigation work. Great expenses are incurred in irrigation projects. I noticed then that it was the simplest thing in the world for the landowner to procure an irrigation district. If he agreed to be rated, the Government went ahead and rated him. There was no intricate legal procedure.

At that time they had another Government agency—the State Savings Bank. The State Savings Bank is for encouraging thrift. The wage-earning population profits by it. The difference between the Australian bond system and ours is manifest. Our farming people, in some instances, are paying more interest than they earn. It was not so in Australia. I have also noted that millions of pounds went from Australia into Canada. Eight per cent interest was paid in Canada; only 4 or 5 per cent was paid at home. This system gave me a new conception of what a Government could accomplish by concerning itself vitally with the affairs of its people. The savings-bank system has reduced interest down to a point where the difference means that the homesteader can meet the note that he has to pay the next year, when before he could not. We must do something to maintain the prosperity and look after the economic welfare of our people.

Mr. KACHI. I am sorry that I can not express my full opinion in English. The full outline of reclamation in Japan, I will leave till to-morrow. In Japan there is a great deal of territory to be reclaimed into rice fields which costs $2.50 per acre. The maximum cost is about $14 per acre. This, of course, balances the intensive use of fields. When it is abnormally dry the cost per acre rises as high as $22.

Mr. MANCHESTER. I should like to inquire what is the best method of stopping leakage in a concrete reservoir? If there is any member here who desires to give me his experience I would be very pleased.

Mr. JORGENSON. In Hawaii the situation is different because we have no winter, but I will gladly furnish you with data in connection with the matter of leakage.

Mr. EHRHORN. I had an opportunity to visit Queensland, and I visited the cotton fields. There was a law being discussed which prohibited families from growing more than 10 acres of cotton. When we consider the enormous loss that was being caused by the cotton bollworm, which you have in that district, and the falling of the cotton bolls caused by neglect, it seemed to me a magnificent scheme to have such a law, thus restricting the amount of cotton raised and thereby emphasizing its care. If you looked at it in a sensible way there would be a great improvement in the handling of cotton.

Mr. MANCHESTER. This law was not carried out.

Doctor MEAD. At the conclusion of this meeting I want to say that I think it is splended to consider how the interest has held up in this general discussion for nearly two hours.

Adjournment.

*Wednesday Morning, April 13, 1927*

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*Topic: "Special Features in Reclamation"*

*Dr. Elwood Mead, Presiding*

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The session was called to order at 9 o'clock by the chairman.

## *LAND IMPROVEMENT AND RECLAMATION IN JAPAN*

*By Dr. Kanichi Kachi*

*Of the Ministry of Agriculture and Forestry, Tokyo, Japan*

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The history of Japan tells us that 3,000 years ago our ancestors cultivated the land, and in those times it was thought that governing the country was identical with governing agriculture and the farmers. I will explain only the evolution that has taken place in the improvement of the cultivated land and the reclamation of waste land during the last 60 years from the end of the feudal age.

The period of the Tokugawa Government may be considered as the age of decentralization, when many hundred feudal lords ruled the districts given to them by the Shogun. The extent of their territories was measured by the amount of rice offered as taxes by the farmers. A large part of the political affairs was agricultural. At this time civil engineering works were limited almost exclusively to works for irrigation, drainage, and river improvement to protect the farm yards.

In 1868 the Tokugawa Government fell, and new Japan was eager to introduce western civilization, including plans for agricultural improvement and especially reclamation. Since that time our material civilization has progressed and, as a matter of course, our farmers' standard of living has improved gradually, but not in proportion to their productive ability.

*Farm adjustment law.*—Not long after this period the problems of agricultural reformation were brought forward by the villagers and politicians. The farm adjustment law was put in force in 1899, as one of the results of a national demand. At first the principal purposes of this law were to arrange the farm segments or lots regularly

and rectangularly, to provide for the respective classes of farm roads, and to distribute the improved farms among the owners under official supervision. In short, it seemed as if the attainment of these two objects—the increasing of the net area of farm lands and the saving of agricultural labor—was all that was expected of this law.

The engineers who were managing the works devoted themselves to obtaining a complete knowledge of agriculture, but serious troubles arose in the several districts, people protesting against decrease in yield, especially of rice and other cereals, as a result of the surface soils and subsoils having been mingled when the land was excavated and leveled. Now I do not hesitate to say that although many were successful in the first stage I am unable to contradict the complaints against the incompleteness of our knowledge and works.

*Practical agricultural engineering.*—Meanwhile practical investigation of the projects progressed and many young engineers, who were educated along the lines of both civil engineering and agriculture, were sent to every prefecture to help in the practical work. They examined all farms and found large areas unproductive, owing to lack of irrigation water or because of marshy conditions from stagnant water. As a result diversion-canal excavation, the construction of weirs and reservoirs, the underdraining of ground water, and the construction of centrifugal pumping plants were begun throughout the country. Thus the object of the land adjustment law was more fully attained.

In 1909, under an amendment to the law, the reclamation works aimed to turn the grass land, wild land, and water planes into cultivated lands, and the nonirrigated farm yards into irrigated rice fields. Thus under the law the projects were divided into important branches. One was the improvement of the land already under cultivation and the other the enlargement of the cultivated lands, especially the irrigated rice fields.

The reclamation work for the waste lands was easy and convenient, and some projects had a satisfactory water supply. About twenty to thirty thousand acres were reclaimed annually even during the World War, the work progressing rapidly owing to the rise of corn prices.

This enlargement of the cultivated area, however, was almost equaled by the decrease in cultivated land as a result of railway and road building and the expansion of cities.

### WASTE-LAND RECLAMATION SUBSIDY

The ever-increasing population caused more official attention to be given to the food problem. So, in 1919, a special act relating to waste-land reclamation subsidy was passed. Under this act, anyone who undertakes to reclaim over 12 acres in a district may obtain an

annual subsidy of 6 per cent of the total amount invested in the works. This subsidy is extended for three years after the completion of the projects. Hence, it is often true that the total amount received as subsidy is from 30 to 60 per cent of the total expenses. The longer the duration of the work, the greater the total subsidy.

As newly reclaimed land requires many years for full improvement those farmers who lack sufficient capital may fail, owing to the difficulties of paying the accumulated interest on their debts before they can obtain a sufficient income from the land. The act provides for subsidizing the interest on the invested capital.

As most of the districts where reclamation projects are undertaken are either deserted or the number of farmers there is very few, it is necessary to bring in new settlers to cultivate the new lands. But these settlers, in general, are so poor that they are unable to afford barns and living houses. Hence prefectoral and governmental subsidies are given to them, the rate always being more than 50 per cent of the cost of each building.

The work under the supervision of the farm adjustment law, with the supplemental encouragement of the acts above mentioned, grew so complicated that the original purpose of the law became only a part of the present law. And considering the present rise in wages of agricultural labor, we must approve the great contribution to agriculture in the saving of farm labor, though formerly it was thought that this would have no effect other than to make the farmers lazy. From this point of view, the work of the regular arrangement of the farm lots must not cease, as it is an essential and useful work.

As amended several times, the farm adjustment law served to help every branch of land improvement and reclamation, though we must recognize the complexities of official procedure, especially when many landowners organized a farm-adjustment corporation.

*Additional governmental aid.*—We must also recognize the fact that some areas of cultivated land may be improved by simply building a reservoir as to the source of water, by the excavation of a main canal, or by repairing diversion weirs, without the regulation of farm lots or releveling of the surface. For this reason, in 1923, another act was passed. Under this act every principal work of improvement relating to areas of more than 1,250 acres of farms in the worst condition, either waterless or too wet, may be subsidized by the Government to the extent of 50 per cent of the expenses.

Referring again to reclamation, some good results were obtained through the efforts of the men engaged on the works, and under the encouragement of the various laws; but these results did not always meet the food demands caused by the increase of population. Small areas of waste lands may be reclaimed under present conditions, but larger

ones, say of more than 1,000 acres, can hardly be brought into cultivation, owing to the many difficulites. For instance, thousands of landowners may not agree on the utilization of the land, because the expenses of the project may aggregate a large amount, although really not so large per unit of area. Futhermore, the industrial or agricultural banks will not loan all the funds needed at once.

*Proposed reclamation work.*—In view of this condition our Government has decided to draw up definite plans for the reclamation of larger areas of land. The fifty-second Imperial Diet this year approved the budget, including the provisions for reclamation, and we are now looking forward to the coming year when we are confident the Diet will approve a definite bill that will provide funds for carrying out reclamation projects.

The following table shows, by years, the adjusted and reclaimed areas and the areas for which main works will be constructed:

| Year | Areas improved and reclaimed under management of land adjustment law | Reclaimed areas after the act of waste-land reclamation subsidy was enacted | Areas for which main works are now under construction (some of the work finished) |
|---|---|---|---|
| | *Acres* | *Acres* | *Acres* |
| 1899 | 2,027 | | |
| 1900 | | | |
| 1901 | 5,561 | | |
| 1902 | 8,086 | | |
| 1903 | 13,534 | | |
| 1904 | 19,125 | | |
| 1905 | 24,601 | | |
| 1906 | 80,942 | | |
| 1907 | 59,302 | | |
| 1908 | 61,623 | | |
| 1909 | 91,243 | | |
| 1910 | 99,641 | | |
| 1911 | 140,464 | | |
| 1912 | 29,410 | | |
| 1913 | 91,001 | | |
| 1914 | 109,810 | | |
| 1915 | 92,312 | | |
| 1916 | 69,880 | | |
| 1917 | 64,802 | | |
| 1918 | 63,866 | | |
| 1919 | 79,697 | 46,851 | |
| 1920 | 96,263 | 23,985 | |
| 1921 | 80,207 | 34,370 | |
| 1922 | 78,689 | 17,578 | |
| 1923 | 92,591 | 1,399 | 45,745 |
| 1924 | 105,753 | 21,597 | 57,942 |
| 1925 | 112,158 | 17,151 | 40,839 |
| 1926 | | 12,628 | 68,476 |
| Total | 1,772,688 | 175,559 | 213,002 |

*The difficulties of land reclamation work in Japan.*—In those localties facing south and seaward much rain falls in the summer, owing to the influence of the summer wind which blows over the Pacific Ocean. On the other hand, in the northern half of Japan there is much precipitation in winter, as a result of the cold winds that sweep in from across the north Japan Sea. As the average annual precipitation on the island is more than 1,700 millimeters (or 70 inches), our

country is more suited to irrigation than to land drainage, as to which we very often meet with much difficulty in the lower alluvial regions.

All the rivers in Japan flow from the mountainous regions which extend from east to west, forming the central axis of the island. These rivers flow north or south from these ranges. There are few rivers longer than 200 miles.

The limited area of watershed, which is a Tertiary or diluvium deposit, is a junction between a steep mountain and a plane, with a sudden change from a mountain to a plane or of an erosion valley to a lower deposit of alluvium. As a natural result, the velocity of the floods is very rapid. Therefore, all farm-protection work, including the maintenance of dams and levees which surround the lower fields, the lining of the river and canal banks, and the several kinds of structures for water supplies meet with great difficulty and expense.

The old works managed by the feudal lords were designed generally on a small scale without systematic plan, so that we often encounter much trouble when we desire to increase the water supply for these lands.

Owing to the incompleteness of these old works, the farmers' interests also differ to a certain extent; so that it is difficult to make them recognize the necessity of farm improvement on a large scale. The greater difficulties are met in those cases where we wish to construct new water works for reclamation to supplement the original water supply systems. Also we encounter frequent difficulties and conflicts when we begin to provide new sources of water for reclamation in conjunction with the power works used at present or to be used in the future. This leads us to anticipate the necessity of a special water law for the future.

These difficulties are, of course, greater in those localities where land utilization is more intensive. Then, also, the enactment of water laws is not such an easy matter. In the development of power and an agricultural water supply, we are guided by many articles, especially by those in the proceedings of the American Society of Civil Engineers.

We bear in mind two essential problems when we are dealing with practical reclamation. One is to distribute the irrigation water to every farm according, more or less, to the duty of water; the other is how to increase the duty of water without any negative effect on crops. The latter may include such problems as how to restrict percolation of water into rice farms, as the lands to be reclaimed in the future are composed largely of either volcanic, light humic, or deluvium earth into which an abnormal amount of percolation is expected. Other difficulties of reclamation are on the economic side. As

most of the Japanese lands to be cultivated in the future are located on steep slopes, the cost of providing a water supply will rise often to more than $500 per acre. This high cost, although it may be reduced by mechanical advantages, is being balanced at present only by the intensive utilization of the land.

## *COOPERATIVE ORGANIZATIONS FOR THE MARKETING OF PRODUCTS FROM IRRIGATED AREAS*

*By C. C. Teague*
*President, California Fruit Exchange*

Doctor Mead has scheduled me to speak on cooperative marketing. Inasmuch as I am a delegate representing the California Development Association, before taking up my subject it is perhaps appropriate to say a few words about that organization which is exerting a wide influence in the sound development of California. The California Development Association was organized in response to a need for a state-wide organization to represent the public and to coordinate public opinion and effort on questions of state-wide interest. It is not a resolutive body and passes no resolutions except where it follows them with actual work of accomplishment or effort toward accomplishment.

The organization consists of a membership representing every part of the State and practically all industries, including agriculture, which voluntarily contribute in the neighborhood of $300,000 per year to its support. A board of directors of 25, representing all parts of the State, are recognized State leaders.

The board meets monthly in different parts of the State, changing the places of meeting each month.

Although California is a State geographically wide-flung, there are on an average 18 of these busy directors in attendance at the meetings.

The office is in the Ferry Building, San Francisco.

The executive organization consists of a president and several vice presidents and a general manager, with departments of industry, including manufacture and natural resources, agriculture, conservation, publicity, and research, with competent managers in charge of each department.

The advisory council is the point of contact with the public and includes all counties and is known under the head of northern California, Bay Region, San Joaquin Valley, Sacramento, Los Angeles, and San Diego. At meetings of the advisory council problems of state-wide and local interests are discussed, and it is often found that problems of local interest become state-wide.

Some of the accomplishments of the development association have been coordination of the campaign of the State department of agriculture and the Federal Department of Agriculture to eradicate the hoof and mouth disease which threatened to embargo California's agricultural products. Through this coordination the disease was stamped out.

The association circulated the appeal to the public for funds for the relief of the Santa Barbara earthquake sufferers.

It has sponsored the publicity campaigns for the prevention of fires that were devastating our forests. It has coordinated the advertising of California so as to provide a complete coast itinerary for tourists, thus making the money expended for advertising much more effective.

It has taken an active interest in the development of the water resources of the State. It sponsors and calls state-wide conferences of our various industries for their mutual benefit. It has coordinated the various research organizations of the State, some 150 in number, so as to avoid duplication of effort. In fact, any subject of State-wide importance receives consideration by the board.

In the three years that I have been a member of the board I have yet to detect the first note of selfishness or desire for local advancement at the expense of other portions of the State. So much for the California Development Association.

## COOPERATIVE MARKETING

At this Pan Pacific Conference Doctor Mead has wisely placed on the program cooperative marketing of agricultural crops, which is intimately related, it seems to me, to all of the divisions of this conference.

Everyone recognizes that agriculture is the basic industry of the world; and after all of what use is it to reclaim land by drainage or irrigation if it is not possible to place families on the land who can raise a product that can be sold for a profit and that will sustain them?

The great problem of agriculture to-day is either overproduction or lack of orderly and proper distribution. Improper distribution is often taken for overproduction, and when proper distribution is had what seems to be overproduction often disappears.

The great demand for food to feed the allied armies during the war, and the high prices resulting, stimulated production to tremendous proportions and caused large areas of new land to be brought into production. With the ending of the war came the postwar readjustment, and most lines of agriculture were found to be greatly overproduced, with a resulting decline in prices which has brought great distress; this notwithstanding the fact that there has been

almost unprecedented prosperity in the United States generally and high buying power. Naturally agriculture feels that it is not getting its fair share of the Nation's prosperity and much unrest has resulted. This has manifested itself in a demand for remedial legislation, most of which has been aimed at control of prices through governmental control of surpluses and the selling of these surpluses in foreign countries with an equalization of the losses back to the producer.

Public sentiment and pressure were so great that Congress, after much discussion, passed a bill embodying the foregoing features, which was vetoed by the President. In his message accompanying the veto the President characterized this type of legislation as unsound and asserted that it would not accomplish the purpose for which it was intended; that the law of supply and demand could not thus be set aside; that the scheme was not workable; that it would cause still greater overproduction and in the end still greater distress; and that the dumping of surpluses by a governmental agency might operate unfavorably on the friendly relations with foreign countries. He expressed the opinion that the greatest relief would lie in the direction of the regulation of supply to consumptive demand and the improvement of distribution and marketing through the development of cooperative marketing organizations. With this opinion expressed from such a high source it is perhaps fitting that this subject should receive some consideration from this conference.

I have considerable sympathy for the proposition advanced yesterday by Mr. Olsen, of the Bureau of Agricultural Economics, that the Government should consider carefully any proposed irrigation and reclamation project to determine whether or not it is warranted in bringing large areas of land into production which will still further add to the distress existing in agriculture, and that it should be pretty certain when this land is brought into production that those who settle it can make a living for themselves and their families.

Doctor Mead has suggested that some of you might be interested in knowing how some of our producers in California are meeting the problem of distribution and marketing through our cooperative marketing organizations.

### THE CALIFORNIA FRUIT GROWERS' EXCHANGE

Because of a rather intimate knowledge of the California Fruit Growers' Exchange and because it is one of the oldest and one of the largest and most successful of our cooperatives, I shall attempt to picture to you this organization and its operations.

Like most successful cooperatives, the California Fruit Growers' Exchange was born of adversity and distress; it seems to require tribulation and disaster to develop that unity of spirit which results in collective action before growers can develop that sense of loyalty

which is necessary to a permanent, successful cooperation and to develop the nccessary type of leadership.

The shipments of the California Fruit Growers' Exchange for the season 1925–26 were 34,000 carloads of oranges and grapefruit and 12,000 carloads of lemons, a total of 46,000 carloads, which constitute 73 per cent of the total of citrus-fruit shipments from California.

The exchangc f. o. b. returns last year wcre $70,750,000; the delivered value of thesc shipments was $97,000,000.

The exchange estimate of shipments for this year is about 60,000 carloads.

The returns from cxchange shipments during the past 23 years equal $737,000,000.

The credit losses during this entire period have amounted to only $31,950, or forty-three ten-thousandths of 1 per cent.

The cost of marketing has been 5.48 cents per box; the district cxchange service 1.38 cents, or a total of 1.42 per cent of the delivered value.

National advcrtising has cost 4½ cents per box on oranges and 7 cents on lemons, making a total cost of marketing and advertising 2.48 per cent of the dclivered value of the fruit.

The California Fruit Growers' Exchange is a noncapital, nonprofit organization; it is strictly a growers' organization. The organization consists of 210 locals and 22 district exchanges, with a membership of about 12,000 growers and a central or parent organization.

### LOCAL ASSOCIATION

This is the organization of the local growers of a community who own the packing-house facilities for assembling and shipping the fruit in carload lots. The functions of the local vary according to the policy of its directors, some performing more services than others, some going so far as to pick the fruit, fumigate the orchards, prune the trees, and provide scientific advice in cultural methods. The fruit of the members of the local is pooled on various plans, somc having pick-around pools, others monthly pools, and still others annual pools.

*Contracts.*—Thc fruit of thc growcrs is contracted to the local and by the local to the district exchange and by the district exchange to thc central. The contract provides that the fruit shall be marketed at cost and is usually for a tcrm of years, with withdrawal privileges allowing growers to withdraw at a given time during the year by giving 30 days' noticc; thc reason for the annual withdrawal period is that it has been found that thcre is less resistance to growers signing that type of a contract, it being the general bclief that the organization must satisfy the grower and if hc is dissatisfied, that he is better out than in.

*District exchange.*—This organization is composed of several locals in a district; sometimes it includes a whole county and in other cases only portions of a county, or it may include several counties. Each local has a director on the district exchange, and each district exchange elects a director on the central.

The purpose of the district exchange is to facilitate the transaction of business with the central. The district exchange employs a sales manager who looks after the shipments and sales of the fruit in his exchange and who is the point of contact with the sales department of the central. The advantage of the district exchange and local exchange system is that it provides a contact of the growers with the central organization, as the director representing the district exchange and the manager keep the locals and their directors fully advised as to the policies of the central. This builds up a spirit of confidence and causes the growers to look upon the exchange as their organization and not something apart from them. We believe that this local association and district exchange system has some advantages over the centralized plan which has been adopted by some of our cooperatives. The centralized plan is sometimes adopted through necessity by reason of the character of the product requiring great central processing plants.

The central or parent organization has a board of 22 directors who meet weekly; these meetings are very democratic in character. It is not uncommon to have 200 or 250 growers in attendance. The business is transacted in the open, and the discussions are informative to the membership and serve to gain and keep their confidence. The directors determine all policies and have full charge of the executive officers of the company. The officers are a president, a first and second vice president, a general manager, assistant general manager, a secretary, and several assistants.

*Sales department.*—There is a lemon sales department and an orange sales department, each of which has a competent manager with an able corps of assistants. The markets are divided into six great divisions with a manager in each division and with salaried agents located in each carload distribution point. There are 75 salaried agents and numerous brokers in smaller markets. Whenever the brokerage of a given point amounts to enough to pay the salary of an agent, an agent is employed.

*Market information.*—Probably there is no more complete market information in the marketing of any agricultural crop than that of the exchange. Each shipper receives daily a copy of all outgoing and incoming wires which show the car number of all fruit shipped, the brand, the size list, and the point of destination, also all diversions and quotations. Incoming wires show date of arrival of car,

offers, and sales by brands. Thus every shipper has complete market information daily on all of these shipments of the exchange.

*Manner of movement of crop.*—At the beginning of the crop season each year an estimate is made of the crop by varieties for the coming season. A plan of distribution is made, based upon the consuming information and experiences of other years, which contemplates the movement of that percentage of the crop which should move monthly in order to properly distribute it. If the crop is large and near the saturation point, an attempt is made to ship the maximum that can be sold and still maintain a reasonable market, in which case the price will be low but will still afford some profit. If the crop is light it is distributed ratably through the consuming months of the year, according to consuming experience, and the price will be regulated by supply and demand conditions, and will be higher than where the maximum quantity is shipped that the market will take.

*Collections.*—No credit is extended. Proceeds of sales are collected as soon as made and are deposited in the bank at point of sale and a check immediately drawn and forwarded unsigned to the Los Angeles office, where it is signed by the proper officers, deposited in the bank at the home office and a check immediately forwarded to the shipper for the entire amount with account sales attached. The shipper is billed weekly for the marketing cost on cars shipped, which is adjusted to the actual cost at the end of the year.

The aim of this system is to regulate supply to demand, to ship the proper quantity daily that the markets will take, and to distribute the shipments ratably among the markets; both are necessary if orderly distribution is to be accomplished. It requires only a small surplus in any market to break it. It is necessary to have stable market conditions if maximum consumption is reached, as only when the market is stable will dealers push a product and it has been demonstrated over and over again that more of a product can be sold on a stabilized market at a fair price than on a weak and declining market at a low price.

*National advertising.*—Shipments are made under brands of locals, but all fruit that reaches a certain standard of perfection specified by the central is packed under "Sunkist," which is the nationally advertised brand of the central. In going through one of the large pineapple plants of Honolulu recently I noted with interest that a considerable portion of the pack was being shipped under labels of the jobbers. This is a practice that we have long since gotten away from. When a shipper packs his fancy product for the jobber, he is building up the reputation of the jobber and not himself, and makes the jobber independent of him and in a position at any time to transfer the consumer demand which he has created for his brand to

another producer. Neither does it enable a great organization to get full advantage of its money spent in national advertising. The exchange spends $1,000,000 a year annually in national advertising and is entering upon its twentieth season of advertising. The first and main object is to increase consumption, featuring the many and delicious uses and healthful qualities of citrus fruits; second, to create consumer and trade preference for California oranges, particularly "Sunkist"; third, to widen markets, minimize cost of distribution through promoting sound merchandising, encourage proper displays, and educate the dealers to sell on reasonable margins.

Educational work is necessary in national merchandising of a great agricultural crop, as all markets are constantly changing. Two million five hundred thousand new consumers are born in the United States each year; there are 400,000 graduates of high schools each year, and 100,000 leaving colleges and universities; 1,250,000 brides start housekeeping each year and an equal number of grooms; thus in a few years the market becomes almost new.

To identify our product to the consumer, this year for the first time nearly 2,000,000,000 oranges will have "Sunkist" stamped on them, thus carrying the message direct to the consumer and allowing the product to be identified.

The exchange has manufactured and distributed 34,000 Sunkist juice extractors which are on the soft-drink counters of the trade, and which have made a new demand for 4,000 carloads of oranges annually.

This last year 260,500 bulletins were distributed to domestic science teachers, and 14,500 dietetic bulletins to nurses' training schools and hospitals. Sixteen thousand colored posters and educational charts on citrus fruits were hung on classroom walls. That this work has borne fruit is indicated by the increased consumptive demand created. During the past 19 years the orange and grapefruit supply of the United States has increased three-fold and the California supply 70 per cent, while the population of the United States has only increased 33 per cent. This increased supply has been consumed without a decrease in price to the producer.

With a large crop of all kinds of fruit selling at ruinously low prices this last year, California's citrus crop was sold at satisfactory prices to the producer.

*Exchange departments.*—The exchange maintains a growers' service department for the purpose of maintaining and increasing the membership. The business of this department is to keep in touch with the transfers of property and the change in personnel of growers, and to see that they continue as members, or if they are not now members, to become members; to study new producing areas, and to

assist in the organization of new locals where there is opportunity for them.

It has a traffic department, the duty of which is to look after the car supply and diversion of cars when shipped; look after claims; and to take up rate questions with the railroads, Interstate Commerce Commission, and State railroad commission.

It has a legal department which advises the central and its officers and agents on all legal questions.

The exchange also has a Fruit Growers' Supply Co., the purpose of which is to furnish its members with major packing house and orchard supplies. Its growers did a business with the supply company last year of $10,000,000. The main purpose of this organization is to protect the members in getting a supply of material and at reasonable prices. The supply company owns timberland upon which there is about 1,000,000,000 feet of standing timber and a like amount of timber is adjacent to and interspersed with the holdings of the companies, which is owned by the Government and it has been set aside for the use of the companies. This will provide a perpetual cutting program and insure its members with a box supply almost perpetually. The company operates two sawmills, one of which is the most complete and modern on the coast, with a capacity of 125,000,000 feet per year.

The foregoing is a sketchy picture of the California Fruit Growers' Exchange and its operations. I have no hesitation in saying that if it were not for the exchange, with the rapidly increasing production which the industry has had, it would be in as serious distress as many of the other agricultural producers of the country are.

What of the future of cooperative marketing of California crops? That it will grow and that a constantly increasing percentage of agricultural crops will be marketed by cooperatives is certain. It is not a cure-all for all of the ills of agriculture. It will not miraculously and instantly relieve the distress of an agricultural industry as soon as organization takes place. The lessons of cooperation must be learned gradually and slowly and it may take years before a majority of our agricultural crops are moved through cooperatives; the difficulties increase something in the ratio of the expanse of the territory covered. The wider the territory, the greater are the difficulties in keeping the producers in touch with the central. It will also be much harder to get a large enough percentage of crops that are grown almost nationally than has been the case in some of our specialized industries where production is limited to certain areas by climate and soil, but I know of no other method by which agricultural producers may secure a proper distribution of their products and receive a reasonable remuneration for their efforts.

## *FINANCING AND OPERATION OF A COOPERATIVE RURAL COMMUNITY*

*By A. C. Hardison*
*Director, American Farm Bureau Federation*

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You have already heard from Mr. Teague a detailed description of the California Fruit Growers' Exchange, of which the two associations I will speak of this morning are members. These associations are the foundations really upon which the California Fruit Growers' Exchange is built. The exchange is a nonprofit, noncapital, noninvestment organization. The association, however, which is composed of growers, owns property and requires a capital investment.

Cooperation is not a mere form of institution. It may well be considered a form of character. It follows upon long education and discipline which develop the habit of order and council in the solution of commission problems. Adversity, competition, and hardships develop character. You learned from Mr. Teague that the foundation of the California Fruit Growers' Exchange was really the advertisers of the industry founded upon the the adversities of the industry.

A history of the cooperative movement is a record of the ability of a community or group to accomplish by united action that which no single member of the group could accomplish so well alone. This principle was well realized by the groups composing the two commodity organizations, of which I will speak, known as the Santa Paula Citrus Fruit Association and the Mupu Citrus Fruit Association of Santa Paula, Ventura County, Calif., organized for the purpose of handling oranges exclusively, while the Santa Paula Fruit Association handles lemons exclusively. Each is an independent legally constituted cooperative and each is voluntarily a member of the California Fruit Exchange, which has been described by Mr. Teague.

Prior to the organization of the Mupu Citrus Fruit Association the general practice in the community was for the producer to sell his crop to one of several commercial buyers who were more interested in their own profits rather than in the welfare of the producer or satisfaction of the consumer. The grower usually found himself at the end of the season with an unsatisfactory percentage of the consumers' dollar, and only too often that meant producing at less than cost.

*Control of product essential.*—After several years of experience the the leading growers realized that if they were to continue in the successful production of oranges they must exercise a greater control over the product and return to the grower sales price less costs. In other words, their product should be sold on merit, and the proceeds

less costs should be returned to the grower; more than that the grower could not expect.

Each organizer of this association thought he produced fruit of a quality better than his neighbor—a conception not unusual—hence insisted that his product should be graded, packed, shipped, and sold for his individual account. This permitted cooperation in packing and selling, the cost of which was apportioned among the members in proportion to the quantity shipped by each. Little or no capital was required.

A commercial buyer, who had the necessary graders installed in an old building designed for another purpose, was willing to grade, pack, and furnish boxes and labels for a fixed sum per packed box, all of which was done under the inspection of the association. This was continued for several seasons. Each season the members became more impressed with the importance of complete control of all of the operations, which finally led to the erection of a complete modern packing plant by the association.

When first organized the original members provided for a membership fee of $50 per acre, payments to be made in fixed annual installments. Orchards of nonmembers were gradually coming into bearing, but there was great reluctance and, in fact, resistance to the fixed annual payment per acre. This resistance was so great that the nonmember preferred to continue with the commercial buyer rather than assume the payment in fixed annual installments. The members began to realize that they were confronted with an unanticipated problem—a human problem. The association was reorganized. The powers delegated by the members to the directors and the obligation of the member was duly set up in the by-laws. The directors were made directly responsible to the membership for the proper conduct of the business. Each member consented to deliver all of his fruit to the association, and that his fruit should be of such quality and free from pests as prescribed by the board of directors. Each member also agreed that the association should deduct from the sales receipts the cost of the maintenance and operation of the association and the property. He furthermore agreed that the sum of 5 cents per packed box should be applied as partial payment on membership fees, until the fee (which at present, 1927, is $80 per acre) was paid. Providing he is not indebted to the association, a member may withdraw upon filing written notice of intention, but his withdrawal may not become effective until the following crop year.

It is significant that the nonmember, while objecting to the fixed annual payment on the membership fee, readily subscribed to the condition authorizing a deduction from his returns of 5 cents per

packed box, which experience shows produces a larger sum per acre per annum than the fixed annual payment would have been.

During more than 15 years of operation only one member has withdrawn, forfeiting to the association his membership fee of $50 per acre. After one year's experience he very humbly petitioned for readmittance, paying once more his membership fee.

*Establishment of revolving fund.*—This association found some years ago that its membership fees would not produce sufficient capital to meet the needs of a rapidly growing industry. By action of the members a revolving fund of 5 cents per packed box was established. This fund has a fixed maximum, which may be varied within that maximum by resolution of the board of directors.

When the amount designated by the board of directors is reached, future deductions are paid to the oldest contributors to the fund pro rata. This fund tends to keep the member's investment more nearly in proportion to the use he makes of the association. The revolving fund is subrogated to all of the liabilities of the association and from a banking standpoint has the same status as paid-in capital.

Paid-in capital and revolving fund may be used by the directors for capital outlay only. All other charges, including interest on borrowed money and depreciation, are treated as expenses.

The intention of the association is that all of its fixed assets and a reasonable percentage of its liquid assets shall ultimately be paid in. Its borrowings will then be only sufficient to properly finance the handling of the current year's crop.

Inasmuch as oranges are shipped very soon after picking and sales are for cash, partial returns from the sale of fruit are usually in the growers' hands within 60 days from the time of picking of the fruit. No advances are made to members in anticipation of the delivery and sale of fruit.

*Lemon cooperative.*—The Santa Paula Citrus Fruit Association is organized along much the same lines as the Mupu Citrus Fruit Association, excepting that it is a nonprofit cooperative with capital stock.

Owing to the fact that a large investment per acre of lemon orchard must be made in curing and packing establishments, and that a high degree of skill is required to properly prepare lemons for the market, the lemon grower very early realized that growing the fruit is only one necessary part of the business, hence, he more readily saw the advantage and, in fact, the necessity of cooperative action in establishing a curing-packing establishment where the method of handling and the care exercised would be under expert control.

Like the Mupu Citrus Association, the original membership fee per acre was nominal, but was soon increased to $90 per acre, and at present (1927) is $180 per acre, payable in fixed annual installments

(evidenced by a written aggreement), which are deductible from the proceeds received by the association from the sale of the members' fruit. These contracts for membership tend to strengthen the financial position of the association, but only in extreme cases should membership contracts be actually used as a basis for financing.

The association also has a revolving fund. The 1926 addition to the revolving fund was a little more than $50,000. The board of directors is in intimate touch with the affairs of the association and endeavor to anticipate its requirements. The Santa Paula Citrus Fruit Association was organized in 1906. The increase in its business may be illustrated by the increase in the ratio of merchantable fruit shipped each fourth year as follows: First year, 1; fourth year, 2; eighth year, 3.1; twelfth year, 8.7; sixteenth year, 14; twentieth year, 17.7.

In 1926 the total shipments of packed fruit exceeded 800 carloads of 400 boxes each.

Some years ago an attempt was made to determine the probable investment per acre of orchard in the association. After much study and careful analysis an estimate of about $600 per acre was made as a probable maximum, which was considered very high, but it was felt that it would provide for all contingencies. The present investment has not yet reached that estimated amount, but has been sufficient to provide facilities for an increase of 50 per cent of the 1926 shipment, or a total output of 1,200 to 1,500 cars per annum.

While the total quantity of orchard-run fruit handled by the association has increased twenty times, the increase of gross assets has been about fifty times, which if converted into standard 1913-dollar value is a fairly reasonable increase considering the services added since organization.

The secured debts have not exceeded one-third of the gross assets, or about 50 per cent of fixed assets.

The temporary or commercial borrowings depend upon the size of the crop to be handled and are used only to pay for labor and material in preparing the product for market. They are recoverable by the association out of the sales of product before any return is made to the member. This unit is considered as large as can be well administered and properly serve its membership. The association has about 80 members owning about 1,500 acres of orchard. The largest holding is 125 acres; the smallest, 1 acre. Not all of the orchards are in full bearing. The gross assets are not by any means all invested in packing-house and marketing facilities.

The association found it necessary to provide housing facilities for many of its employees, particularly pickers, and it now owns 25 acres of suburban properties on which it has built 100 houses.

It has five autobusses for transporting pickers, and maintains for its members an equipment crew sufficient to pick the entire crop. It keeps in its own storage tanks sufficient fuel oil to supply its members. It owns and operates a complete insectary, in which are reared parasites for the control, so far as practical, of some of the pests of citrus trees. It maintains an efficient entomologist who has charge of the management of the insectary and the control of scale and insect pests. It maintains for the use of its members at cost, pruning crews with means of transportation. It maintains a chemical laboratory, the capital invested being furnished by the association while the expense and cost of maintenance are borne by the patrons of the laboratory. It owns a proportionate interest in the Fruit Growers Supply Co., a grower-owned cooperative, from which the association purchases at cost, box material, nails, wraps, labels, fertilizer, and many other necessary articles. The supply company owns a large timber acreage and a complete sawmill and box factory of sufficient capacity to furnish a large percentage of the box material used by its members.

The association owns a proportionate interest in a cooperative lemon-products factory in which that part of the fruit not suitable for shipment is salvaged and from which citric acid, lemon oil, and pectin are the principal products. As much as 1,000,000 pounds of citric acid can be made in a year in this factory.

Through cooperative agreement the members of Mupu Citrus Association participate in the cost of and benefits derived from the insectary and entomologist. The same is true of the chemical laboratory. It is maintained for the benefit of the community, sufficient growers patronizing it to warrant its continuance without cost to the association other than loss of use of capital investment.

The distribution of gross assets is about as follows: 63 per cent is in fixed assets and includes the ownership of stock in other cooperatives; 20 per cent is in liquid assets; 17 per cent is cash due growers.

All cash received from sales during a calendar month are distributed to the members by the 15th of the following month.

The foregoing gives an idea of what may be accomplished by cooperative effort even though commenced in a very small way.

Financing may be thought difficult, but in the inception of a community or commodity cooperative enterprise very little financing may be required.

A few members possessing the right character and ability may soon be able to demonstrate in a practical way that a saving can be made or a better and more efficient service can be rendered without additional cost.

This accomplished, the banker will look with favor on the enterprise and loan as much to the cooperative as good business judgment dictates. Conservative business methods must be followed and nothing new should be undertaken until thorough examination and analysis have been made. Those interested must be satisfied that it is fair and equitable and unquestionably practical. The limitations of a cooperative are such that in many fields it can not compete with a commercial organization. It can not successfully do many things that a commercial organization can do at a profit.

It has been said that the success or failure of a cooperative may be judged by the character of its members. The character that may hope to succeed follows upon long education and discipline which develop the habit of order and aid in the solution of common problems.

Adjournment.

## *Wednesday Afternoon, April 13, 1927*

### *Round Table Discussion*

*Prof. Frederick Krauss, of the University of Hawaii, Presiding*

The session was called to order at 2 o'clock by the chairman.

Mr. Mason. It has been my thought, while listening to the various papers presented at the morning session, that sooner or later it will become necessary for our Western States to adopt some of the practices of other countries. Unless it is possible to find the capital necessary for irrigation projects at low rates of interest, your interest accumulates more rapidly than your development. And that can result in but one ending—bankruptcy! A few weeks ago, I visited a very beautiful valley in Montana, surrounding the city of Columbus. About 12 years ago, at the request of the resident landowners of the region, there was organized the Columbus irrigation district. It was not a promotion scheme; it was just a legitimate local improvement. The people voted bonds and sold them, and with the proceeds constructed a canal along the Yellowstone River. This canal for a distance of about a mile or so skirted a high, rocky bluff. Eventually the rock in this bluff slid and fell into the canal; the flow of water was stopped. There was no agency to which the district could go for further credit; its bonds were issued and sold and it had borrowed all that it could borrow in the ordinary financial market. Once the water stopped flowing and there was no more money available with which to repair the canal, the bonds were worth nothing.

I saw dozens of homes in this valley without a window in them; all of them unoccupied. Not an acre of land in the entire valley was under the plow. It might as well never have been taken from the Indians. If there had been a source of credit for the irrigation project, the large body of land of the county might have been saved as a productive asset. I might add that when irrigation stopped the owners of the land quit paying their irrigation taxes, and once they ceased doing this, they also very readily neglected to pay their State, county, and school taxes. But right at hand was a wonderful supply

of water and a beautiful valley of great productive possibilities. Land next door, so to speak, is producing sugar beets that will return $100 per acre.

There are 10 Western States which have copied the California irrigation district act—the original Wright Act which is known as the father of them all. Development under these district acts, in the main, was where irrigation was already commenced by private companies and those companies reached the end of their financial resources. They found that it was such a long-term job that the interest on their securities made the completion impossible, or individuals had gone in and put down their own wells and with sufficiently good production to give fair security for the money desired to be borrowed to put in larger works. But those developments are pretty much behind us to-day. On the whole, they have been successful because the sources of supply were comparatively easy and inexpensive to develop and comparatively near at hand, and the cost of the works seldom ran as high as $50 an acre as compared to $500 an acre as our friend from Japan estimated some of these works would probably run into in Japan. The majority of these districts have been a success and have met their financial obligations in face of the credit difficulty, the difficulty of convincing capital of the soundness of the securities and their desirability, with each district or possible entity the possible or legitimate prey of contractors, engineers, attorneys, bond houses, cement men, and anybody else with a profit to be made.

I dare say that prior to 12 years ago there was not one irrigation district in the State of California that actually obtained in value received for its bonds so much as 50 cents on the dollar if you subtract the engineering fees, the contractor's profit, the bond discount, the attorney's fees, and the incidentals. It seemed to me that that was rather an unnecessary load to burden a man with, whom you were asking to go out and bring in virgin soil and help increase the wealth and population of a community. It was only 40 years ago that the great San Joaquin Valley of California was the San Joaquin Desert. Along with some others we have been trying for some years to make it possible for these fundamentally necessary public improvements to be made at some reasonable cost. We talk about the farmers not getting enough for their products—granted—but suppose we considered for a little while the possibility of reducing the cost of credit to the farmer in the irrigated country. As Doctor Mead pointed out yesterday, 3 per cent a year would probably be a conservative figure of his present excess cost. Seven per cent is 75 per cent more than 4 per cent and it is not 3 per cent. His interest charge is one of his large costs, and if you can reduce his interest charge 75 per cent you have accomplished something very much

worth while. It seems that the entire tendency is—how can I get more or how can the farmer get more and how can we all get more—which necessarily is going to increase the cost of food in the cities. It was only last year in California that the potato growers had a short crop and were successful in coopcrating, so to speak, and raising the price of potatoes in the city. The San Francisco Housewives Leaguc, however, declared a boycott on potatoes, so that their increased price did not benefit the potato growers very much. The house wives league broke the price, and you got a strike from the city. We don't often hear that possibility mentioned or discussed; but, obviously, if the cost of food is going to be higher in the cities, labor in the city must get a raise. If labor gets a raise, the cost of manufacturing goods must go up, and if the cost of manufacturing goods goes up that means that thc farmer must pay more for thc goods he has to buy, and you are just going around in a circle. But if you can rcduce the cost to the farmer; if you can improve his credit; if you can by more able supervision and guidance put in irrigation works more intelligently and comprchensively, and in a more coordinated way, instead of leaving cach little community to virtually pioneer from the start, and not profit by the mistakes made previously in other communities, does it not appear that such measures would tend to reduce the cost of the irrigation works? As our friend Mr. Hardison said, water in his community costs $22 an acre-foot and 3 acre-feet are not excessive for many crops, which is $66 an acre a year for water. It is only the very extreme specialty crop, of course, that could afford to pay any such cost.

In closing I should like to refer to a decision of the United States Supreme Court of more than 30 years ago, sustaining the constitutionality of the Wright Irrigation Act of California. The Supreme Court pointed out that in arid and semiarid States, such as California, if there is any public improvement work that is fundamentally necessary for which credit must be establishcd and maintained, it is irrigation-district crcdit, without which therc would be no need for schoolhouscs and permanent roads, and therc could never be a permanent foundation for big cities. So, briefly, California's development has bcen by irrigation districts. There have been issued to datc approximately $100,000,000 worth of bonds. The property pledged as security for these bonds has to-day a value in excess of $800,000,000 that some years prior to irrigation did not grow crops justifying a value on that same land of probably more than $25,000,000. The actual production of crops in the irrigated districts in California has averaged for the past several years more than $200,000,000—200 per cent a year gross—and that record was accomplished without subsidy, without one penny of loss, and in the face of banking prejudices and misunderstandings and lack of sympathy.

Mr. HARDISON. I should like to correct one impression that might, perhaps, be inferred from my own remarks. The charge of $22 an acre-foot is the maximum charge and applies to a very small acreage. That same concern delivers water at a lower altitude for a much smaller charge. A large portion of the irrigated land in the community has irrigation water at a cost delivered for $5 per acre-foot. The cost of water in that community varies between $5 minimum and the $22 maximum, depending on the relative elevation to which the water must be lifted with pumps.

Mr. KACHI. My answers in the morning session were not complete, therefore I will repeat them. Regarding the water right, as I have already mentioned, most of the irrigation systems in Japan were organized in the old days under the management of the lords or "Daimiyo." Some villages or districts were irrigated with an excess of water, while some always felt the lack of water though they were both supplied from the same source.

Notwithstanding all this, these irrigation systems are generally acknowledged by the public as an established water right so far as they have continued from ancient times, with no regard to the amount of water used. We intend, however, to change these conditions through the enactment of special water laws, and to share the water for new irrigation. This change is strongly recommended by the Government. Any new water-supply development is controlled by the department of agriculture, which always consults with the department of home affairs.

The building of reservoirs is less disturbed by ancient customs; they have proved beneficial. The capacities of these dams are not large, most of them impounding from 1,000,000 cubic feet to 30,000,000 cubic feet.

Many of these storage dams I am not able to mention here, but perhaps 10,000 dams have been built during the last 25 years under the land-adjusting law. The average expense of impounding 100 cubic feet of water is about 40 cents. This cost was 15 cents before the World War. Next I am obliged to repeat that the subsidies mentioned in my address this morning are never repaid.

The CHAIRMAN. The cost, which is now 40 cents, was 15 cents before the war. Apparently costs have gone up there even at so great a distance from the main source of trouble.

Mr. CATTANACH. A question was put to me in regard to the use of water in Australia. I tried to point out that the water is the property of the Government or Crown, and I don't want the impression to get about that there is an abundance of water and that no difficulties arise. We maintain that one of the direct advantages of Government control is that we are able to allocate and deal with the

water in times of shortage. Although I stated that we had very few troubles, it is true that in Australia we have at times shortages of water. When this occurs it becomes necessary—apart from our works of control and management—to allocate the waters to what we believe the most beneficial use in the State. This is a very difficult matter to arrange—very often painful—but I think that is one of the direct arguments in favor of Government control.

The governmental agency endeavors, in the first place, to allocate the water to those districts which it believes will be most beneficial to landholders and incidentally to the State itself. So far we have been able to get through without very much severe criticism. We are each year endeavoring to meet the shortages by building larger reservoirs, and, as I said this morning and more than once, we are, at the present time engaged in building storages that will practically treble the storage we now possess. We try to allocate the water so that it will be most beneficial for irrigation and also reserve enough water to meet any deficiencies that may arise. We likewise endeavor to allow for any expansion of irrigation that we believe will take place in the future.

The CHAIRMAN. The centralization of the responsibility of a resource so important as water can not be overestimated, and sooner or later the practical people of the United States are going to see that point.

Is there anyone who doubts the success of cooperation in California? Is there anyone who doubts the difficulties of bringing about successful cooperative enterprises? Is there anyone who questions the benefits that arise from rightly conducted cooperation? I confess that the doubts that I have had on the subject have been very well dispelled, because when men of responsibility back up their statements with figures which can be verified, then there can be very little question about the value of cooperation.

Mr. CATTANACH. Allow me to commend, so far as I possibly can, the value of the papers we heard this morning from Mr. Teague and Mr. Kachi. I can speak with some authority and some confidence in regard to the value of what has been done in California. Just before I came away I was presented with a grapefruit—rather as a reproach—and I think it was stamped with the name "Sunkist." That was away down in Melbourne, Victoria; and I think that any organization that can come into our country (where we believe and we say that we grow the best fruit in the world) must be a very powerful one and is doing a great work.

Still more, perhaps, do we show our appreciation of what is being accomplished in California in our efforts to copy the work of the fruit associations of that State. We have quite recently, and with

some measure of success, practically arranged to carry on our marketing along similar lines. We are going to try, if possible, to improve on what has been done by the California association. To my mind if there is any flaw in the system in vogue in California it lies in the direction of not making reasonable advances to the growers during the time of marketing their products. Now, I realize that you are dealing with a financial asset—with what may be a good asset to-day but which may be deteriorated to-morrow—hence the necessity of conservative action. But it seems an unreasonable situation to me, unless the growers are wealthy men, and I understand that the members of this association are, generally speaking, fairly well to do. But I think you have to regard the man who is struggling and endeavoring to get ahead and make his holding a success. It does not seem reasonable that the grower, who first of all undertakes the expense of producing his goods should have to wait practically until the last bill is received for the sale, or anyway until a fair share of his product is sold, before realizing on his labors. Now, we are trying to meet this situation by the establishment of what is called a roller bank or a roller credit, which operates as follows:

When a number of growers form themselves into a corporation or company and have themselves registered and incorporated, this branch roller bank or roller financial institution advances to this corporation, on the security of the crop, a liberal sum of money sufficient to carry the growers over until they get their full returns. We believe it is necessary to encourage the growers and those living in the country in the same way as any manufacturer can obtain advances on his stock before he sells it. But it needs a good deal of careful management. It requires a conservative view, and we endeavor as far as possible to keep the advance as low as possible. Up to the present time the authorities have gotten through with very little loss, but with great satisfaction and considerable convenience for those who are engaged in producing the goods. If anyone can do without this assistance, all well and good. There are, however, quite a number of growers, making their start in land, who have put up with the many troubles that are peculiar to land settlement, and we believe those who are honestly trying and endeavoring to do their best should be encouraged by granting them reasonable advances to meet their expenses until their crops are disposed of.

One of our troubles is that we also endeavor as far as possible to keep the management of these concerns entirely in the hands of growers. We do invite business men to act as directors, and I am glad to say that a number of leading men of great ability in the commercial world are prepared to place their services at the disposal of this association. In that way we endeavor to keep a firm hold on the management of the association.

There are two or three difficulties to be encountered. One of them is that we can not always get everyone to come into the association. Such individuals are quite honest, but they do not like the idea of being tied down to anything. They may just slightly undercut you every time, and if there are 2,000,000 of them you begin to find that your association is crumbling. Our difficulty is to try and drag these men into the association; to convince them that, even though they may have their personal feelings regarding the matter, it is sufficiently beneficial to the business as a whole to warrant their coming into the organization.

There is another thing that Mr. Teague did not mention, and that is in connection with the auction sales. While we are endeavoring to get reasonable prices for the goods that we are selling, a big ring or combination will sometimes deflate the market and reduce prices. We have experienced difficulty in this respect. But I don't imagine that the Australian is very much different from the resident of the United States in such matters as the foregoing.

I appreciate most highly the manner in which the subject was presented by Mr. Teague and Mr. Kachi, and I certainly have not been disappointed by what I have heard to-day.

I just want to add another word. We in Australia are placed somewhat differently from you in America. You have behind you a population of possibly one hundred and fifteen or one hundred and twenty millions. In Australia we have a population of a little over 6,000,000, and, therefore, while you probably can consume 80 or 90 per cent of your produce within your own boundaries we have to reserve it, and while we may consume 20 to 30 per cent within the boundaries of Australia, we have to export a great deal more, and, therefore, we are always subject to cross currents that happen in overseas markets. But notwithstanding that we find permanent benefit coming from the systematic marketing of our fruit, and I should like to remark that we always, down below, concede that California has about the best selling organization that we can copy from. We are trying to get the best; at the same time I should like to say that we think in regard to your irrigation laws that you are almost as far back as we are in regard to your selling.

Mr. TEAGUE. From what I have heard of the Australian laws I am inclined to believe they are correct—that we are far behind Australia in handling these great natural resources.

As to buying rings that may interfere with our producers getting proper prices for their commodities, we experience very little difficulty. In the first place, the auction system has developed a very large number of small buyers—peddler trade—fellows who do not cooperate in their buying policies. We regulate in large measure the price at these auctions through the medium of our representative.

Let us take New York for example. Our resident manager in that market determines how many cars should be offered on a certain day. He knows fully what the fruit is worth based upon the market conditions prevailing in other parts of the United States and he has full market information. He offers those cars, and if he does not receive a satisfactory bid within a reasonable range of the market value, he withdraws from the sale and we divert cars away from New York that may be in transit, until the market is ready to take them and pay the price the fruit is worth in other markets. That is the way we meet the situation.

Mr. CATTANACH. You don't mean that after you put the car up at auction you withdraw it?

Mr. TEAGUE. The particular car that is put up for auction is sold, although we may withdraw and need not necessarily sell it. We sell a portion of a car that is actually offered at the price bid, but if the price on the balance of the car is not satisfactory we withdraw it. In the first place, we would only have in New York—if the market would consume 10 trucks on that day—what the market would absorb and if the market would absorb only two trucks at a reasonable price, the balance would go over until another sale or until the market was ready to absorb them at a reasonable price. We don't sell by the whole carload necessarily, but by sizes, and lots, and so many boxes; and so many boxes are offered of a car. It does not mean that the carload itself will sell at the price offered.

Mr. CATTANACH. Does your agent fix the price?

Mr. TEAGUE. He has authority, necessarily, to handle all matters and, of course, he has full market information as I have said.

Now, regarding the system of advances to growers. You are wrong in assuming that our citrus growers are wealthy men. The average size of our orchards is somewhere from 10 to 15 acres, and we have people of all classes and all degrees of financial responsibility growing fruit. Many poor men are among them. I do not know much about the banking system of Australia, but in our citrus producing areas, if a man has been able to finance his grove up to a producing point and if he has good land and if he is a good man and entitled to credit, there is usually no trouble for him to obtain credit at what we consider here in the West a reasonable rate of interest, namely, from 6 to 7 per cent. After he has grown his crop our bankers consider it part of legitimate banking to finance the making of his crop up to the point where the man begins to get his money out of it. Our growers experience no difficulty in financing themselves. I have heard of banks financing the growing of a crop even when the growers were financially involved. The banker who makes such an advance is very glad to do so in order that the crop may bring back a profit to

the producer and help repay him the money advanced. So, you see, there has been no need in our case of going into the business of advancing to our growers.

Mr. CATTANACH. Would the bank take a lien on the crop?

Mr. TEAGUE. The banker will take a lien if he thinks the financial responsibility of the grower rather weak. If he considers the man a good financial risk, in the regular course of banking, he will advance him what money he needs to make his crop, and the regular common practice is to advance the money unsecured. It is only where the man is perhaps rather financially weak and where some other creditor might step in and attach the crop that the banker would take a chattel mortgage securing him for advances made. Your system may be all right in your country and under your conditions, but I don't think it would do here. I might say that some of our competitors—the independent operators—do go out and make advances to the growers in order to secure the handling of their fruit, but it has not been enough of a factor with us to interfere seriously with our control of the percentage of the crop which is necessary to secure proper distribution. Everyone recognizes that the smaller percentage of the crop that a corporation controls the less effective will be the distribution. If your percentage runs down too low you perhaps can not be very effective in the exercise of proper control of distribution. We controlled 73 per cent of the exchange of last year's shipments of oranges and 90 per cent of the lemons grown in California. The outsider is continually quoting under us. He is continually shipping without regard to the proper supply that should go forward, and we are obliged to look at the thing broadly. We know what he ships from day to day; we know that the market has certain consuming power; and that the crop can be consumed over the year. Therefore, if the grower ships more than his proportion, we cut down until the supply is right. We usually find that he ships on not nearly so comprehensive information as we possess, and frequently he ships heavily, and sometimes heavily into auctions, when other markets are much better and where we know he is bound to get a rolling, and we let him get it. That is the way we handle the situation.

Mr. MASON. In regard to the reserve Mr. Cattanach suggested.

Mr. TEAGUE. We have not any set system because we find it unnecessary. We have not found any combination of buyers against us. We do find that the auctions naturally are sort of dumping grounds for lower grades of fruit—fruits affected by frost, etc.—and naturally the auction gets a larger percentage of that type of fruit than do our private-sale markets, but nevertheless these auction markets, such as New York and Boston and markets of that kind, usually do

pay for the better grades of fruit of good quality and in good condition as good an average price as we get in our best private-sale markets.

Mr. CATTANACH. You say 73 per cent of your oranges and 90 per cent of your lemon crop are controlled by the association. Is that increasing or decreasing?

Mr. TEAGUE. We are just about at a standstill. We will increase a little one year and decrease another. Oftentimes the figures shown are not indicative of actual conditions because of crop conditions. We may have, for example, a very large crop in a district where the exchange is very strong, where it controls a 100 per cent membership, and we may have in another district a light crop where the exchange perhaps has not over 60 per cent and these factors have quite an influence on the percentage at the end of the year. Things like frost and heat in different districts influence the total. Our percentage this year will not be so high as it was the year before, just for the reasons mentioned—frost, and the fact that the independents were strongest in some of the districts where they were least hurt by the frost.

Mr. CATTANACH. You say that 27 per cent of the oranges were controlled by outsiders?

Mr. TEAGUE. Yes; it is higher than we should like to have it. One might imagine that with the record of the California exchange we would have everybody in, but you have all types of men to deal with—men who do not understand the system and can not understand that their interest lies in developing the cooperation which handles all the industrial problems and which is making the market for the crop. There are all degrees of human nature. We have the selfish man, and the man who does not understand it. The cash buyer comes along, offers the grower cash (and you know that a little cash in the hand is pretty handy), and he sells. I am frank to say that we have not been so active in our membership campaign as we have in some other divisions of our work. We have had a satisfactory control, and have found it so, and we have not gone out hard after new memberships, but we could be still more effective if we could control a larger percentage of the crop.

Our system is a local exchange system, with a local management that is particularly systematic in regard to the handling of the local business. The local board of directory and the local manager have everything to do with the preparation of the fruit, except that they must comply with Sunkist regulations. If you get a weak local manager, generally in that same district you get a strong competitive manager, a keen, bright, wide-awake manager who knows the fruit game and who comes very much nearer making a showing when

you compare your sales than if he were up against one of our well-operated locals. That is one of the difficulties of a decentralized organization, depending upon the grower and the local manager to put their fruit up right. We take it and sell it regardless of what it is, but they must put it up under certain specifications if it goes out as Sunkist. We will find within our organization a great difference in the average price per pound or per box that our most efficient men receive for their fruit as compared to the most inefficient, and always the independent is the stronger where he is in competition with the weakest member of our system.

The CHAIRMAN. Would Professor Hunt like to add something on this subject?

Professor HUNT. I shall be glad to answer questions. Mr. Kachi's paper of this morning, of course, did not leave anything out, so I can add nothing to the situation.

There are one or two things, however, that I think Mr. Teague might reemphasize. That is, many in the corporation as Mr. Teague knows, especially with other fruits, went into this without any appreciation of the fact that it took money, and they sometimes failed before they got under way. I believe it would be desirable for Mr. Teague to tell us just how the locals get the money; how they collect it to have the funds necessary to any organization.

Another question that I think should be emphasized is the importance of the citrus industry. A few days ago I had occasion to learn of the prices of various agricultural products in California and I found, I believe I can say, that the prices were maintained more regularly for oranges and lemons through the depression than any other California fruit.

Mr. TEAGUE. One reason why they got through the depression and had a market for their crops was because they financed it. They were in a position to finance it directly to the wholesaler in the big cities. When this depression came the speculator had some difficulty to carry on and because of falling prices he had to take bigger risks; therefore he had to get a larger percentage; but all the time the citrus industry was going right along with its own funds and putting this fruit into the New York, Boston, and Philadelphia markets. Consequently, I believe this is why the citrus fruit held up better than any other California fruit. I think your question was directed more at Mr. Hardison's discussion than mine.

Mr. HARDISON. I should like to say this in relation to the method of distribution. Years ago the citrus grower used to sell quite a percentage of his crop to associate buyers who put it in storage for use during the summer or later in the year. The practice has been changing gradually, and to-day the tendency is for the buyer to buy in smaller quantities.

In relation to financing, take the association to which I referred this morning. We found the citrus grower declined to become a member of the association if he had to sign a contract for a definite annual payment. We, therefore, made the change to 5 cents a box and deducted that from his returns. Now, we arrived at the figure of 5 cents a box in this way. We felt that we could grade, pack, and ship as cheaply as a commercial buyer. In fact, if we took advantage of the facilities offered by the California Fruit Growers Exchange and their subsidiaries, we might do it just a little bit cheaper, but say that we could do it at the same cost. The Santa Paula Association is a very small association and we shipped 300 carloads that year. At 5 cents a box that netted $6,000. We have had to expand our facilities to meet the growing needs of the industry. In other words, the product of our growers has been greater than our facilities for taking proper care of it, so we asked the grower to contribute another 5 cents a box, or $12,000 a year, and in a few years we shall liquidate the investment we made. During the last year we increased the capacity of our plant from three carloads per day up to a possible eight. Borrowed money is being liquidated at the rate of $12,000 a year and in five or six years our debts will be paid. To my mind, that is a good sound business, and when you can make a presentation of that kind to the grower, if he is of the right character, there is no difficulty in securing his membership. In fact, the membership in our particular locality is 100 per cent, both in the orange and lemon business, and it has been due to that analysis that we undertook the thing to perform a service or to make a saving.

We undertook nothing where the cost was to be increased, and the result is the Santa Paula Citrus Association. It has made a very large capital investment, but that investment would not have been made if we had not been able to render service to the members of the association. In that association there never has been a withdrawal, except in cases where the growers have withdrawn in order to go into another organization by reason of change of ownership.

Mr. TEAGUE. In California we have a very competent banking system. I don't know whether you have such in Australia or not. We have a great many competitors in the banking business. A citrus account, under the control of the California Fruit Growers' Exchange, is considered by bankers as one of the most desirable banking accounts. If an association wants to build a packing house and have a banker carry the investment, there is no difficulty whatever in having it done. In fact this is done too often. In other words, the credit is too easy or too liberal without providing the means of repayment. Mr. Hardison's associations, both of them, have been farsighted enough in their policy to provide for repayment out of the crop. Not all of the associations have done that and they are

having no difficulty whatever in carrying their investment, owing to the anxiety of the banker to get the account and to retain it.

Mr. CATTANACH. Why is it you control 90 per cent of the lemons and 73 per cent of the oranges?

Mr. TEAGUE. The reason is that the lemon business is a very difficult one to handle. It requires a larger central plant or storage capacity and larger investment to handle successfully, and the independents have not been able to make any headway in meeting that situation. Consequently, the lemon grower has not been able to receive satisfactory prices at all from the independent operators. Then, again, they are not nearly so well able to handle the market situation in selling the lemons and are not so well organized for it as we are. We are able, through this control, to outsell them so much in the market through our improved methods and our supervision and through our advertising program that they are unable to make a showing against us. It proves that whenever a corporation is able to put an industry on a satisfactory basis and the producers are doing fairly well, people will rush into production. We don't feel that so quickly in the fruit crop, where it takes five or six years to get a production, as you would in an agricultural crop, but it brings us great competition. While we have made satisfactory progress in the lemon business in increasing the demand by reason of the need of it, it does not tend to increase the consumption nearly so rapidly as the orange. The orange is a beautiful thing to look at, it has an appetite appeal, and the development of the orange-juice business is a very important factor in the development of the demand for oranges. We are experiencing some difficulty in our lemon business. Is was difficult, in the time we had for discussion this morning, to cover these things because you understand it is a comprehensive subject to treat.

Mr. CATTANACH. What do you do each year to make your Sunkist better than the previous year?

Mr. TEAGUE. We have adopted a policy of standard on our Sunkist that must be reached by 70 or 75 per cent of the fruit, but our standard does not materially change. We have not found it necessary to change our standard of Sunkist in some years. We have done many things to protect Sunkist, such as during the frost. We have learned, just as soon as we have a frost, to close our packing house, and we have regulations that no fruit can be shipped unless it comes up to certain specifications which have been enacted in the law. We, therefore, have the assistance of the State inspector, and, in addition, the pure-food inspector of the United States, who seizes this fruit if it is shipped without being good. But we control it at this end. Through the efforts of our corporation we have gotten the growers together and have induced them to agree to a sugar

standard, and also to agree to a standard of maturity so that the sugar in the fruit must be 8 to 1 of the acid. Therefore, we have prevented the shipment of poor fruit.

We have not up to the present time attempted to exercise much influence on the control of production. As I stated in my discussion this morning, we have been able to take care of the increasing production in the orange business very satisfactorily. We are coming to the place more and more when one of the duties of the corporation in the future will be to keep correct statistical information as to the trend of production (the new acreage planted; the new acreage coming into production) and give that information fully to the public. In other words, if it is apparent that we are facing an ample supply, let it be generally known, so that investors do not rush into production. Only that far have we attempted to exercise control of production.

We have in the lemon business, however, exercised a stronger control of shipments than we have in the orange, for the reason that we have reached in the lemon business an overproduction period, without any question in the world. We had an actual overproduction last year of 25 to 75 per cent more lemons than had ever been sold in the history of this country. We recognized that we were up against a hard proposition, so we met that by forming what was known as the lemon shippers' agreement, under the terms of which the lemon shippers agreed to turn over to the distribution committee the question of determining the quantity of fruit that would go forward and each would ship only his portion of that quantity, his percentage being based upon the storage of lemons in his house. We operated that way last year. We sent 25 per cent of the product to by-product packing plants on a salvage basis, where it only returned to the growers about $10 a ton. Notwithstanding that, we were able to sell the other 75 per cent, so that every competent producer with a reasonable production, assuming that his cost line was reasonable, last year made money out of the lemon business and had a very satisfactory year with shipment of only 75 per cent of the crop. That I think is unparalleled, Mr. Chairman, in the history of the marketing of agricultural crops.

Adjournment.

## *Thursday Morning, April 14, 1927*

*Topic: "Land Settlement Problems"*

*Dr. Elwood Mead, Presiding*

The session was called to order at 9 o'clock by the chairman.

## *POLICY OF PERU IN IRRIGATION, AUTOCOLONIZATION, AND COLONIZATION OF THE COUNTRY IN THE LAST SIX YEARS*

*By E. Torres Belon*

*Member of Congress and Engineer in Reclamation Work, Lima, Peru*

A firm and loyal purpose impels the present Government of Peru, together with a considerable number of citizens who favor it, to recover for production stretches of territory now arid through lack of irrigation, and to settle them with small proprietary owners, each possessing a home and a piece of land which assures his livelihood and, together with it, his liberty. This allotment, which refers particularly and primarily to the arid strip along the Pacific coast, is consummated with the purpose of increasing the nuclei of small owners in the elevated plain situated between the divisions of the Andes Range. The land is exceptionally favored by nature for the breeding of livestock and the creation of settlements for numerous natives dominated by strong pastoral traditions; through acquisition by the State of large tracts to be divided into small parcels and sold to settlers on advantageous terms.

We still have left in the country an extensive zone of virgin forests, crossed by enormous rivers which empty into the Atlantic, and for whose development penetrating networks of railways and roads have been constructed, connecting this zone with the middle settlements. Possession is liberally offered to any group of foreign population that may desire to settle in it.

### LEADING IDEA

The motive of this policy is perfectly explicable when dealing with Peru, where enormous topographical accidents of territory and transformations of political structure have profoundly divided its mass of population, for the most part native, leaving some groups isolated, without solid ties of nationality and without the spirit of reciprocal cooperation. To this is due the project of planting in the reclaimed lands, for its cultivation, nuclei of selected national settlers of sober and industrious habits, people coming from several centers in the southern part of the country, such as Arequipa, where the division of property may have accustomed them to an atmosphere of freedom and strengthened their love of the land. We call this autocolonization.

### LEGISLATION

Ample legislation, enacted while the program was unfolding, completes our laws of January 4, 1913, on irrigation and colonization. Thus has been procured special law No. 4,663 for the completed project for irrigation of 20,000 acres in the Pampas de Imperial in Cañete, and provision for their sale in 659 lots. Law No. 5,240 provides that laborers who have worked 500 days on the lands of this project acquire thereby a free title to a hectare.

These laws, which I have cited as having reference to a project already completed and in full cultivation, apply also to new projects under construction, and had in view two principal purposes: To adapt the law to the requirements in each case; and, more important, to increase each time and more vigorously the intervention of the State in the land resources, in order to determine their regulation and appropriate use.

### CONSTRUCTION

A review of the situation and a description of the work accomplished and in process of accomplishment are indispensable; and for this, rather than my personal conclusion, which might be one-sided, I prefer to submit the report given to me by Engineer Charles W. Sutton, who has directed and is directing the work of irrigation in Peru, with whose opinions and conclusions I am in complete accord.

### PHYSICAL CONDITIONS

It would be presumptuous to attempt to state the total area of cultivated land in Peru, or the total capital employed in the country. I estimate, deducting those figures of isolated cases which I have supposed typical, that the national capital is not under £400,000,000, and that the total area of cultivation is about 1,600,000 hectares

(4,000,000 acres), not including clearings under way in the regions of the forests. In almost all the lands thus considered irrigation is practiced, for in the mountain and coast sections of Peru irrigation is a traditional part of the agricultural program.

This is especially true on the coast, where 254,000 hectares (640,000 acres), with less than 6 inches of rain per annum, depended in 1919 exclusively on irrigation. It is probable that this area returns almost half of the agricultural production of the country. Nevertheless, the lands of the coast, like the remainder of the country, suffer from insufficient capital and lack of method in administration and cultivation; and above all in lack of adequate and permanent means of communication, drainage, and irrigation.

In spite of this situation, the climate and other physical conditions are so favorable to agriculture, and the necessary crops are produced with so little effort, that few realize the smallness of present profits in view of the great possibilities of the country.

Of the £400,000,000 estimated as the capital of the country, it is probable that not more than £40,000,000 are employed in irrigation. Nevertheless, this capital produces annually, at least, another flat sum which may be estimated as 30 per cent of the total yield of all the industries, inclusive of agriculture itself. No other investment gives so great a gross return in proportion to the capital invested. Ten per cent of the capital of the country produces, with irrigation, 30 per cent of the annual revenue of the country.

The distribution of this income, however, is very uneven. The native population constitutes 70 per cent of the total population, but to-day it receives less than 30 per cent of the gross produce of the lands which, theoretically at least, they realized under the Incas dominion. The principal causes which hold the level of compensation of the agricultural population below the proportion their national well-being requires are:

(*a*) The natural limitation of cultivated and irrigated lands, and their small capitalization.

(*b*) The natural tendency to expansion and consolidation of the large sugar and cotton plantations.

(*c*) The lack of a social agricultural bank.

(*d*) The restriction of agricultural qualifications for cotton growers.

(*e*) Lack of contact with the markets.

### INVENTORY OF LAND AND WATER RESOURCES

With the purpose of lessening the effect of these obstacles to national agricultural progress, the Government commenced in the year 1904 to take systematic inventories of its resources in lands and waters of the coast region, a region which very soon presented greater facilities for the solution of this problem, on account of its

nearness to the best markets of the world, as well as to the greatest centers of national consumption. The coast has always been, since colonial times, the center of commerce and government, and within a radius of 1,400 miles, it is linked by 25 ports with foreign markets.

Probably half of the agricultural capital of the country is invested in this coast region, which comprised, in 1919, 254,000 hectares (640,000 acres).

A program of construction and colonization of irrigation projects was instituted in 1920 by the Government in the coast regions, where it was estimated that 1,000,000 acres (about 400,000 hectares) were susceptible of irrigation. This area is divided into 20 valleys.

### LAND VALUES

The measure of the feasibility of these projects is based on the estimated value of £100 per hectare as a limit. This is equivalent, at present exchange, to approximately $150 per acre.

This limit, which in the United States may be considered high, must be judged in relation to the fact that in 1920, as is the case to-day, it was impossible to purchase a small property, even of 10 hectares (25 acres) for less than £400 per hectare, about $600 per acre at present rates of exchange. It is to be remembered, of course, that the lands possessed perpetual irrigation and full water rights.

The high value of small agricultural properties is due to the fact that such property is the only instrument in the country to assure economic and social liberty to more than 50 per cent of the population. If the small agriculturist is given the opportunity to sell his lands at any price, he replies "What shall I do with the money?"; for the reason that if he exchanges his land for money he is not able to buy other land, nor to employ the cash capital in another investment so productive that it will assure him, at the same time, his daily bread, and independence in any economic or social emergency.

Agricultural traditions in Peru are so strong that there is no element of population which does not seek to take advantage of the opportunity to buy agricultural lands when these opportunities are presented in a feasible form.

### THE LABOR SITUATION

The population of Peru is growing at the rate of 7 per 1,000 annually. Every year are added 28,000 individuals to the potential agricultural population. Each year the country needs to provide opportunities for the sustenance of 14,000 families of new Peruvians. This increase is certain to hasten, although not immediately, the demand for land; but in practice its effect is retroactive, because it

has been going on for years past, and accumulations of great balances of the population are without economic opportunities.

This increase in population has resulted in the subdivision of small properties among the children of parents to a point where more subdivisions are impossible; and it has had besides, the tendency to keep the day wage and the social condition of the agricultural class on so low a level that social progress becomes each day more difficult.

A brief review, slightly more in detail, will convince any who may be inclined to doubt the accuracy of this statement, because of difficulty in obtaining sufficient day laborers for public works or new agricultural enterprises.

There exists yet, in large agricultural districts of the Cordillora, the traditional system of dividing and sorting. The Indian, although free under the theory of the law and the constitution, is not capable of understanding his freedom and continues to regard his patron as owner of the land and of himself. Receiving from his patron the land that he cultivates and paying him in service, produce, and livestock, up to the point of retaining only that which is essential to meet the most primitive bodily and material needs, the Indian does not comprehend an economic situation which allows him to offer his services to another person, without interference from that patron who constitutes the essence of the system of patronage. It is not true, then, that there are no day laborers. The truth is that such available day laborers are under the control of the patrons, who exploit them to the detriment of the contractor who wishes to employ them.

There is another factor, also, which affects the situation: That is the establishment on the coast and in the mountains of large foreign mining enterprises. These pay good wages and enhance the economic condition of the Indian. But, on the other hand, the result of their intervention in the economics of the country necessarily tends to increase the demand for provisions and other necessities, the value of which is affected by the international exchange of the world. It is true that the intervention in Peruvian industry, of oil and mineral companies, with foreign capital, is of great benefit; but it is apparent that it is not necessary for Peru to give agricultural opportunities to the class of population which furnishes day laborers for these enterprises. Counterbalanced by an agricultural population established on the basis of small properties, these foreign industries not only are of much benefit to the country, but they will be more adequately protected from the exploitations which inevitably result from the clashes of opposing interests in an unbalanced state of society.

*Demand for land.*—That there has been strong competition between a large group of agricultural, mining, and farming population and the children of professional and commercial men of the towns, is not only sustained by general demographic studies, but by two positive

experiments during the past six years in the development of the agrarian program of the Government.

The first lands irrigated by the Government and offered for sale in lots less than 40 hectares (about 100 acres), and in lots as small as 5 hectares (about 12½ acres) were all bought, within 24 hours after the opening of the sale, by men of all social classes, from the laborer or day worker who earned less than S/3 daily to doctors, engineers, and lawyers whose fees varied from an amount barely necessary for their support, up to £2,000 and £3,000 annually.

The other case is that of the Department of Lambayeque. There the agricultural wage on the sugar plantations varied from S/1.50 to S/2.50. These plantations adopted systems of expansion, including districts of expansion and the organization of day laborers, established in such a way that they could resist the mobilization, within the department, of other groups of day laborers, especially when recruited in the same districts from which their own laborers were drawn.

As a consequence, the irrigation service had to organize a special department for the mobilization of day laborers, taking care not to touch nor receive laborers from the plantations, confining its search for new working elements to distant districts. Nevertheless, by putting the wage in some districts up to S/1.80, it has been possible to register 4,000 laborers in less than a year. When it is considered that on the plantations, the laborer often receives, in addition to his wage, small lots of land to cultivate, lives in a central village, has many of the satisfactions which it is possible to obtain only in cities, and has a permanent residence; and that, on the other hand, construction work on hydraulic projects requires the laborer to live far away from towns, without opportunities to satisfy many of his social instincts, the possibility is evident of mobilizing enough elements in Peru not only for construction but also for colonization of irrigation projects.

## IMPERIAL PAMPAS PROJECT

It was because of this situation that, in June, 1920, the initial step was taken by Peru, the first in the history of the country, to remedy or temper the lack of social agricultural opportunities for the people. This step was the beginning of construction on the irrigation project of the Imperial Pampas, situated 80 kilometers from Lima, in the Valley of Cañete.

The project embraces 8,000 hectares (20,000 acres). It was finished in 1923 and opened to colonization in June, 1924, at a cost of £75 per hectare, approximately $110 per acre, current exchange. The project consists of two parts—one irrigated by gravity and the

other by pumping. The pumping part constitutes approximately 15 per cent of the total.

I have already referred to the fact that the lands were all sold within 24 hours. To-day, two and one-half years after the sale to the public, 66 per cent of the lands irrigable by gravity are cultivated.

Cultivation of the area to be served by the pumping system has been delayed until hydroelectric installation shall have been completed, making possible the sale of power at low rates. This decision has been reached since the laying of the canal for developing, in its own trajection, 7,000 horsepower.

It is the hope of the Government that some particular enterprise will take advantage of the industrial opportunity presented by the great cotton fields of this project, with its abundant endowment of waterfalls, to install in an established town factories for the weaving of cotton, as well as other industries dependent upon the supply of agricultural products. If this feature of the project is not realized the Government will itself, without doubt, proceed with the installation of driving power to an amount sufficient at least for pumping.

In the colonization of lands of the Imperial Pampas, many methods were studied and discussed. As happens in the greater number of cases, the lands to be irrigated were not owned by the State. The possibility of solving this problem in the manner employed in some other countries, by the placing of an ad valorem tax on the land, the State reserving to itself the right to apply the tax according to the valuation of the lands by the owners themselves, or of expropriating according to this same valuation, was considered inapplicable, for the reason that it was necessary to overcome strong opposition in a population whose elements, politically active and conscious, were practically all owners of great stretches of untilled or semitilled lands.

Recourse was had, then, to the following expedient: Congress passed a law giving owners of the pampas the opportunity to buy half of their lands within a certain time at the rate of £7 per hectare (about $10 per acre), offering at the same time to sell necessary water rights for the irrigation of the other half, which remained in the hands of the original owners. If within the term specified the owners did not accept the proposition, the estate, according to the law, would be expropriated at the price of $10 per acre.

All owners gladly accepted these conditions. The Government sold the lands thus acquired in lots of 12 to 100 acres in area. Convenient terms of payment were arranged, the total amount to be paid in 25 years, without interest. Interest was charged only on installments when due and not paid.

## THE OLMOS PROJECT

Upon completion of the Imperial Pampas project, the State began another project 500 miles to the north of Lima. This project contemplates the irrigation of 70,000 hectares (175,000 acres) of unimproved land and 70,000 hectares (175,000 acres) of lands with incomplete irrigation rights. In effect, the supply of water, according to this project, would be increased from an amount sufficient to irrigate 60,000 acres to an amount sufficient to irrigate 350,000 acres. This is an equivalent to handing over to the national agriculture 290,000 acres of new lands with the right of perpetual irrigation.

Plans for this project contemplate the construction of two dams 150 feet in height and the building of 18 miles of tunnels. One tunnel, 10 miles long, crosses the Continental Divide, and will have a capacity of 700 cubic feet per second from the Atlantic to the Pacific.

This project, to which has been given the popular name of Olmos project, will unite the flow of six rivers in only one discharge system. It embraces six works of extensive drainage and the construction of 150 miles of trunk canals, 100 miles of drainage trunks, 300 miles of trunk wagon roads, the rebuilding, establishment, and drainage of more than 15 urban centers, and the establishment of a port.

Less than 20 per cent of the construction work on this project has actually been started, owing to the destructive rains and floods of the year 1925; but all the preparatory work of the construction plant, including repair factories, warehouses, and offices, is complete.

Because of the complete destruction in 1925 of works which irrigated 18,000 acres in the valley of the Chira and Piura Rivers, of the Department of Piura, the Government has undertaken the reconstruction of these works, to this end purchasing the buildings of the company concerned in the enterprise. The Government contemplated reconstruction of the works, increasing the irrigation capacity to 45,000 acres, and ultimately to 95,000 acres.

In January of this year a new canal supplied irrigation service to 20,000 acres in the Valley of Piura. The irrigation works for service of 25,000 acres in the Valley of the Chira are 50 per cent finished. It may be possible within three or four months to utilize the first completed section of the canal for irrigation of 10,000 acres.

In short, during the past six years the Government has constructed works for completely irrigating 40,000 acres. Of this amount 34,000 acres are now colonized and cultivated; and within four months works will be completed for irrigating another 10,000 acres, which will be immediately colonized. Works under construction, when completed, will irrigate 365,000 additional acres.

If the present rate of progress is maintained, as expected, projects under way will provide new irrigation service at the rate of 40,000 per annum.

### PRIVATE CONSTRUCTION

Apart from construction and colonization works under the immediate direction of the Government, similar enterprises have been undertaken by private capital, with the assistance of the Government. These include: An area of 4,000 hectares (about 10,000 acres) in the Chilca Pampas, 50 miles to the south of Lima; and 7,000 hectares (about 17,500 acres) in the Huambo Pampas, 50 miles north of Lima.

Government participation, in the first case, consists in permitting State engineers to cooperate with the enterprise responsible for the work, with the purpose of encouraging a project which shall promote the interests of individual States, including those of colonization.

The Government, in the second case, assumes the debt of the enterprise and completes the work at its own expense, and in this way is enabled to dispose of the irrigated lands in small lots for colonization.

This account of the Peruvian agrarian policy in relation to irrigation covers the principal points which may interest the conference in Honolulu.

The figures which I give of national finances, of national production, and of the distribution of revenue are, in the absence of a national statistical official, necessarily approximated.

The figures pertaining to projects constructed and under construction, however, are exact, and it is certain that if the Government continues its activities in the north of Peru with the same interest and financial assistance which have characterized its policy during the past three years, we will have placed under irrigation by the year 1931, 200,000 acres of which 130,000 acres will have the character of permanent irrigation and 80,000 acres of summer irrigation. This is in addition to the 40,000 acres irrigated during the past 6 years. This economic result brings with it the sanitation of villages in the irrigated region in consequence of the better profits from the fields, the construction of roads and systems of drinking water, and the drainage necessary for assuring the permanence and healthfulness of villages in the irrigated zones. Also, the increase year by year in the benefited areas comes as a result, not so much of the continued investment of approximately half a million pounds annually, as of the cumulative effect of the organization and equipment effected in the past six years.

### CONCLUSION

This brief aecount indieates what Peru has done, is doing, and proposes to do in order to reeover the unproduetive portions of its soil, and fit it to be the habitation of an intelligent and energetic population, strongly bound together by a high spirit of nationality and independence.

We bring to thc conference no notable results covering a long period of years which may help to solve similar problems in other eountries; we bring, instead, the fullest desire of cooperation in the general work, and above all an intense eagerness to profit by the experience and suggestions of other participating countries, with the purpose of bringing more effective data to the future eonferences, which surely must be held, inspired with the same aims for the benefit of humanity.

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## *ACHIEVEMENTS OF A PRIVATE LAND SETTLEMENT COLONY: A REPORT OF PROGRESS*

*By Thomas Forsyth Hunt*

*The objective.*—It is the gcneral opinion that the Patterson colony, situated in the San Joaquin Valley on the west bank of the San Joaquin River, at a town called Patterson, is an honest and sympathetie attempt at land colonization which has been reasonably successful.

History, however, is not founded upon opinion, but upon documentary evidence. It appeared desirable, therefore, for the College of Agriculture of the University of California, by proper documentation, to determine the extent to which the eolony has succeeded or failed; and, as available data may indicate, the causes, if possible, for sueh sueeess or failure.

Doubtless 17 years is too short a time in which to reach final conclusions. However, there are a number of people still living who have known this colony somewhat intimately since its inception. The Patterson family has becn eonnccted with this tract of land since 1866, when J. D. Pattcrson purehased it at 45 cents per acre. It seemcd that testimony from these living sources of information should be plaeed on file at this juneture, so that at the end of a generation a complete history may be written.

There arc about 325 separate cnterprises in the eolony. In addition there are about 175 nonresident owners. To date 163 of these enterprises have been studied, and 55 nonresident owners havc replied to a questionnaire. The 163 ranches comprise about two-thirds of the privately owned land.

The study on which this paper is based is part of a larger inquiry which might be entitled "Does farming pay?"; more specifically, "Is farming worth while, for example, to the graduate of a college of agriculture?" How do the satisfactions which rural people obtain financially, intellectually, and socially compare with those obtained by urban people?

*Early history.*—The Rancho del Puerto, which is the basis of the Patterson colony, was founded on a Mexican grant to Mariano Hernandez and Pedro Hernandez, made on January 20, 1844, by Manuel Micketorena, governor of the Californias. On August 15, 1864, the United States of America patented this tract to Samuel G. Reed and Reuben Wade, the document bearing the signature of Abraham Lincoln. The deed calls for 13,340.39 acres.

On June 8, 1866, Reed and Wade transferred the tract, for the sum of $5,000, to J. O. Oldridge, who in turn, on August 14 of the same year, deeded it to John D. Patterson, Westfield, N. Y., for $5,400. Adjoining areas were acquired later, including portions of the Rancho El Pescadero and the town site of Patterson, so that finally the holding consisted of about 19,000 acres.

Until 1910 the Rancho del Puerto was a dry-land grain (wheat and barley) ranch. Large quantities of grain were shipped by boat from a landing on the property. Mr. Patterson owned land in several other parts of California, as well as in other States, including New York, Iowa, Nebraska, and Texas. When feed was short, horses, cattle, and sheep were sometimes moved from the Rancho del Puerto to his other holdings in the valley.

Mr. Patterson lived in northern New York, visiting his California properties occasionally. Rancho del Puerto was conducted through an overseer, much after the fashion of an English estate. For many years Mr. W. W. Patterson (now living at 830 Longridge Road, Oakland) was overseer, while Charles A. Sperry (now living at Santa Cruz, Calif.) served as an assistant and finally as overseer. A headquarters ranch was operated by employed help, the buildings of which are still standing, near the corner of Sycamore and Fruit Avenues. Here horses, cattle, and sheep were reared, including Percheron and Belgian horses, which were marketed in the Bay region. McNab and Smith, leading draymen in the nineties, purchased horses in carload lots from the Rancho del Puerto.

The raising of horses ceased about 1906. The other five farms were leased on a crop-rent basis. Some of the well-known renters of these leased farms were John Welty, Vernalis; John Vanorjer, Tracy; William W. Cox, Patterson; Louis Elfers, Crows Landing; and Fred Bartch (deceased).

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THE PATTERSON RANCH CO.

Mr. Patterson died in 1902, and the death of his wife occurred in 1906. There being no children, Rancho del Puerto went to his brothers and their heirs. About 1890 a nephew of John D. Patterson—Thomas W. Patterson—came to Fresno, where he became a banker. In 1909 he got the heirs together and proposed that they develop the property. The interests of those who were not disposed to do so were purchased, and a corporation known as the Patterson Ranch Co. was formed with T. W. Patterson as president and manager and W. W. Patterson, Oakland, as secretary. The latter served in this capacity until 1923.

An irrigation system was constructed by pumping water from the San Joaquin River. A description of this project, by G. C. Stevens, will be found in the Engineering Record for September 10, 1910. The first land was sold to colonists in July, 1910. Water was turned into the canal in September of the same year.

Thomas W. Patterson died in 1910. The Patterson colony was the dream of "Tom" Patterson, as he was affectionately called. To him it was more than a commercial enterprise. His sympathy and helpfulness were highly appreciated by many of the settlers. It resulted in the colony having many high-class people. A drinking fountain in the public park testifies to the esteem in which he was held.

ERECTED IN MEMORY
OF
T. W. PATTERSON
BY
PATTERSON WOMEN'S IMPROVEMENT CLUB
AUGUST, 1921

After T. W. Patterson died, his cousin J. D. Patterson came from Woodstock, Canada, and was the active head of the enterprise until 1923. There are many reasons why this decade was a critical period for the ranch company and for the colonists. The families that weathered it universally testify to his sympathy and constructive ability. His third interest in the Patterson ranch was acquired in 1923 by J. D. Patterson, jr., and Mrs. Blair Rogers, Fresno, who already owned the other two-thirds of the shares. Mr. J. D. Patterson and Mrs. Blair Rogers are son and daughter respectively of Thomas W. Patterson, organizer of the colony. Mr. J. D. Patterson, jr., who is now the active manager of the enterprise, is therefore, the grand nephew of the original J. D. Patterson who purchased the Rancho del Puerto in 1866. There has thus been, for 60 years, a

continuous interest by the Patterson family in this tract. Much credit for the success of the colony must be given to this group of Pattersons who by their ability, integrity, energy, and patience have helped 300 colonists (mostly immigrants) to become self-reliant citizens.

### PATTERSON WATER CO.

Every person who buys land in the Patterson colony receives, without additional charge, one share of water stock per acre, which entitles him to 2 acre-feet of water. The large majorityof the water stock is now owned by the colonists. For the past 13 years R. J. Spooner has been superintendent of the water company. For some years the minimum charge has been $7 per acre. On the heavier adobe land in practice less than 2 acre-feet of water are used, but on the Yolo clay loams more than 2 acre-feet are demanded. When over 2 acre-feet are used the charge is $3.50 an acre-foot additional. The average duty of water over the whole area is about 2.5 acre-feet.

Water coming from the San Joaquin River is excellent in quality and has generally been ample, although in the dry year of 1924 the situation became somewhat grave. Use of water from the Sierra Nevada irrigation districts, such as the Modesto and Turlock irrigation districts, helps to maintain the flow of the San Joaquin River because of the return water reaching the river at the season of minimum flow.

The cost of operation has been about $6 per 2 acre-feet of water. Electric power obtained from the Pacific Gas & Electric Co. represents about one-half the total cost of operating the system. Instead of returning the surplus to the share holders, it is used in concreting ditches and making other improvements designed eventually to lower the cost of operation. Out of 50 miles of laterals, 20 miles have thus far been concreted. There are about 2 miles of main and lateral canals for each square mile of land within the colony.

Water is served annually to about 500 separate tracts of land, although the number of individuals is somewhat less, since it is the custom for resident owners to rent the tracts of nonresident owners. Thus a colonist may own 10 acres and at the same time rent 2 other tracts of from 10 to 20 acres each. The water company deals with each tract separately. The town of Patterson has its own separate domestic supply of water obtained from three wells.

To the casual observer the Patterson colony is as level as the surface of a lake. In fact, however, the elevation at the railroad on the west edge of the tract is about 50 feet above the bank of the San Joaquin River on the east, 3 miles distant. Thus there is a gentle slope toward the river of 17 feet to the mile.

The water is lifted from the San Joaquin River through 3 intakes and conveyed in a concrete canal across the tract from east to west for about 3.5 miles (17,500 feet). At four points along this main canal the water is lifted, and laterals lead off north and south for about 5 miles in each direction.

*The turnover.*—Records of the Patterson Ranch Co., as reported to me by its president, J. D. Patterson, show that up to March 1, 1915, it had sold 12,185 acres at an average price of $226.15 an acre. The Patterson water system, owned by the colonists themselves, serves 14,618 acres.

Hence in the first three years of the colony, about six-sevenths of the irrigated land had been purchased at what was then considered a rather high price, but which is now deemed a low price.

It is interesting to note that the president of the ranch company states that the company would to-day be better off had it been able in the beginning to sell the whole property at $150 an acre, to some one who would have done the exploiting. In other words, it has cost the company more than $75 an acre to place the property on the market and manage it until the present date.

There are among the 163 farmers interviewed 39 residents owning 1,434 acres, who purchased land in the Patterson colony prior to 1914. If the remaining colonists show a similiar history, then at least three out of every four persons who were in the colony in 1914 are no longer residents there. When this record is complete, a larger turnover will doubtless be indicated.

*Ownership.*—Data have been obtained from 163 farm enterprises in the Patterson colony. (See Table 1.) Of this number 155 are operated by resident or nonresident owners, while 8 are tenants only. Fifty-one owners rent other land, while 104 operate only the land they own. The total area operated by these 163 farmers is 8,297 acres, of which 2,046 acres are rented. The average size of these 163 farm enterprises thus far visited is 51 acres. About one-half the farmers in the colony have been visited. Hence the average size of the enterprises not visited is considerably less, since about two-thirds of the area has been surveyed.

The average holding of 51 farmers who rent additional land is 60 acres, of which 30 acres are owned and 30 rented. The average size of the holdings of 104 ranchers who rent no additional land is 45 acres, and of 8 tenants is 46 acres. Apparently an average holding of 45 acres has been found fairly satisfactory, while owners of an average of 30 acres have an urge to expand their operations, especially if they are under 50 years of age. Probably this practice of renting additional land by the smaller holders is due not only to the urge to expand, but because expansion is possible without a large increase in capital investment.

While the 50 owner renters rent half of the land they operate, if all the area operated by the 163 ranchers is considered, it is found that 1 aere in 4 is rented. Under the free flow of economic forces it appears that in the colony the rental of one-fourth the area is desirable.

It is interesting to observe that in the State of California 21.4 per cent of the farmers are renters. Tenancy is increasing and will continue to inerease as land prices become more stable. All land-settlement enterprises should take cognizance of this economic tendency. It is not something to be avoided, but a fact to be met squarely. While there are well-known political and sociological advantages in farm ownership, it is diffieult to show an important financial advantage when the priee of land is not rising. The Government and the States planning land colonization might well consider giving the colonists the alternative of buying or renting.

### IMPROVEMENTS

Improvements in the eolony, as well as those in the town of Patterson, show the influence of conseious planning. The average value of buildings for 131 farms in the colony is approximately $4,000, while on 117,000 farms in California it was, in 1900, about $2,500. In the former instance, more than $100 per acre; in the latter, less than $10. The eolonists have the enjoyment of these better facilities as well as the burden of earning interest on this additional investment.

### PREVIOUS OCCUPATION

New enterprises always attraet a number of adventurers and ne'er-do-wells who must sooner or later be eliminated. The Patterson eolony was evidently no exception to this rule. However, the colony is now pretty well shaken down. This faet is shown by the occupations of the present farmers immediately before coming to the eolony. Out of 144, 115 were tenant dairymen, farmers, farm laborers, or otherwise eonneeted with farming. Sixty-five were tenant dairymen. Most of them brought herds of cows with them. Within a month, and sometimes within a week after arrival, they received a milk cheek. This was not true of some of the earlier settlers who bought raw land. By the time they had ehecked the land, seeded it to alfalfa, and obtained their first harvest, two and sometimes three years had elapsed. Often by this time the expense of preparation of the land, erection of neeessary buildings and fences, and living expenses had exhausted their resources, and they had no money left with which to buy eows. Milk was about the only source of ineome, except the sale of alfalfa, the price of which in those early days was extremely low.

The early settlers who still remain generally emphasize the low price of alfalfa hay as causing many of their neighbors to fail. It is evident, however, that the previous experience of most of the present owners qualifies them to succeed in the kind of farming to which the colony is best adapted. The people who have succeeded are the people who knew how to succeed. This condition has been brought about principally by a process of economic elimination, not by conscious selection.

The president of the Patterson Ranch Co., Mr. J. D. Patterson, states that, although perhaps in former days it would not have been possible; yet now he would not sell a piece of property unless the would-be purchaser had two or three thousand dollars worth of assets—preferably a herd of cows. A tenant dairyman who owns a string of cows free of debt is a good financial risk, not alone because of the assets, but because it represents an ability and willingness to work and to save. Most of the 29 present farmers who were engaged in some other occupation immediately preceding purchase in the colony had some previous farm experience.

*Previous occupations*

| | |
|---|---|
| Tenant dairymen | 65 |
| Farmers | 35 |
| Other farm occupations | 15 |
| All other occupations | 29 |
| Number of enterprises | 144 |

*Nonresident owners.*—About 500 properties pay water taxes. Of these, about one-third are nonresident owners. Replies to a questionnaire, received from 55 of them, show that the properties are generally free from debt, and are rented either to tenants or resident owners who wish to expand their operations. Only 11 of the nonresident owners ever lived in the colony, and few of them ever intended to live in the colony. Occasionally a man indicates that his dream is to use it as a place to which to retire, notwithstanding the fact that a real farm is not a place to retire to, but a place from which to retire with advancing age. The motive admitted by most of them was to secure an income from renting, or a profit by selling on a rise in price. Sometimes other properties were traded. One stated that his motive in buying was to help a friend. Sometimes the motive for the purchase was purely emotional—the pride of ownership. A few nonresident owners have developed peach and apricot orchards or vineyards, which they operate through employed labor under competent supervision.

Twenty-two out of 51 state that they are not satisfied with their investment, 9 are qualifiedly satisfied, and 20 are satisfied.

These nonresident owners do not expect nor ask sympathy, any more than men who invest in mining stock or oil wells. They are generally engaged in some occupation that is more satisfactory to them and possess surplus funds for investment. People who buy land are not the only ones who make unwise investments.

While in some respects nonresident owners are unsatisfactory; for example, they are apt to be delinquent in their water rent; nevertheless they are an economic advantage to the resident operators. They offer the residents a source of elasticity. These nonresident areas scattered throughout the colony furnish an opportunity for expansion or contraction in the size of the residents' operations. When a farmer's herd of cows increases, or for any reason he wishes to milk more cows, he can rent a near-by tract and thus expand without having to make a large capital investment. If one of the fields of alfalfa runs out—which is just now a common complaint—the farmer can rent a similar area until the new seeding is ready to harvest. Or, if he decides to plant part of his farm to apricots, peaches, or grapes, the equivalent area of alfalfa may be rented without disturbing his usual activity or income. For the reasons given and perhaps others, such as a price of 62 cents per pound for butterfat (including the milk), good alfalfa land is in great demand at a rental of $30 to $35 an acre.

Humanity is a mobile mass which like an amœba requires opportunity to expand and contract. Farmers are no exception to the rule. The greater stability of the farmer is a national asset, but this greater stability is a human drawback. A farmer's activity tends to expand until he is 35 to 40 years old, and to contract after 50 years of age. A system of land ownership which facilitates this essentially biological process is desirable.

Nineteen per cent of 152 farmers interviewed are 60 years of age or over. A number of these referred to the disabilities of increasing age. This was particularly true of dairymen. Curiously enough the only solution which seems to them feasible is to reduce their activities, rather than to increase the size of their operations, so that they may be in a position to employ additional labor. Evidently they had not anticipated their status in time.

## THE CHIEF INDUSTRIES

The chief industry of the colony is milking cows. (See Table 2.) Eighty-one dairymen who milked 10 cows or more had, in 1926, a gross income of $319,255, of which $305,785 was from dairy products, old cows, and calves. Forty-five fruit men had, in 1926, a gross income of $160,953, of which $124,820 was from fruit, especially peaches, apricots, and grapes. (See Table 3.)

Among the returns from fruit growers are included returns from several nonresident owners, and one large planting of 223 acres, which is perhaps not strictly a commercial enterprise, although doubtless the owner hopes to make it so. If these were omitted the showing would be less favorable.

Twenty-nine bean growers had, in 1926, a gross income of $66,933, of which $23,189 was from beans. (See Table 4.) The year 1926 was generally considered about normal by dairymen, above normal by fruit men—the best that they had ever had—while it is generally conceded that the bean growers had a disastrous year.

During and since the war good prices for beans prevailed. Some of the farmers found, when their alfalfa began to die out after 10 to 15 years, that with this fresh ground and at the then prevailing prices for beans they could get returns per acre equal to returns from dairy products, and the work was much less exacting. This led some of the farmers to reduce their herds or to sell them out entirely.

When, with new land and a good season, growers obtained from 18 to 22 sacks of beans per acre, which brought $6 to $8 a sack, it was not uncommon to gross $125 an acre. But with land which is now not so new to beans, coupled with an unfavorable season, from 8 to 12 sacks only are obtained, and these on slow sale at $4.50 a sack bring less than $40 per acre. Because the income from the rest of the bean grower's acreage was greater, his farm income was $48 per acre. Whether it is wet or dry, hot or cool, the dairyman goes along on the even tenor of his way with a farm income of $70 an acre. (See Table 5.)

Poultry raising, including turkeys, is practiced generally as a side line. The usual answer of a dairyman as to the number of chickens is "a few." Apparently little attention is paid to the so-called "farm flock." Incomes of from $300 to $600 for turkeys have been reported. There are several growers of rabbits, but no one who has been interviewed makes an independent living from them. Now and then a farmer keeps from 90 to 100 does, and raises 2,500 rabbits for sale as meat. In 1926 the average price was 60 cents each, but growers are now feeling the competition of frozen Australian rabbits, which it is said are delivered in San Francisco at four for $1.

### FUTURE COLONISTS

The majority of the residents of the Patterson colony came to this country as steerage passengers. Among 165 residents 30 have two American-born parents and 16 have two foreign-born parents. The remainder, 109, are foreign born and come chiefly from the Azores, or Western Islands, Switzerland, Italy, Sweden, and Norway.

Because of their religious and other affiliations the Portuguese, Swiss, and Italians may be regarded as belonging to one group and the Swedes, Norwegians, Danish, and Finnish to another group.

It is not far from the truth to say that the colony consists of two groups—one from Scandinavia, who came by way of Minnesota, and the other from the Azores, coming by way of Crows Landing. Whatever may be said of the hardships and privations these Portuguese farmers may have experienced, it can not be gainsaid that men who came to America as steerage passengers 20 to 30 years ago and now are worth $10,000 to $20,000 have prospered financially. One of them told me that when he was a boy in the Azores his father gave him a dollar as a pocket piece. This was all the money he had when he arrived in California. "You have not done so badly," I remarked. "No," he said; "I am well satisfied with what America has done for me."

During the war, a committee of three visited a well-to-do Portuguese farmer, asking him to buy Liberty bonds. He refused to purchase them, "You see this land," he exclaimed; "it is all mine! You see these buildings; they are all mine; and these cattle are mine! That is what America has done for me. I will not buy these bonds, but the Government can have anything that I own and it needs." It took considerable effort to make this patriotic Portuguese-American understand that the Government could not accept his property.

As I began to find that most of the dairymen in the colony had previously been tenants who had bought a string of cows, I was puzzled as to how they had been able to finance themselves. I tried one day to learn the assets of a dairyman at the time of the purchase of his farm. He told me that he had paid so much down, and had bought cows and equipment worth another figure. Adding the two amounts I said, "Then you were worth so much." "No indeed," he said; "if I had been, I would have gone back to the Azores. I could have lived there the rest of my life on that amount." He had done the customary thing—mortgaged his cows to make the first payment on his land.

The procedure was essentially as follows: The immigrant arrived in California with $1 or $20, as the case might be. Because he could not speak English, he hired out a to dairyman of his own nationality for $20 to $40 a month and board. In the last 30 years the cows of California have been milked, when by other than the owner himself or his wife, by men who were learning to speak the English language.

These Portuguese, Swiss, or Italians continue to milk cows, wearing overalls and rubber boots until they save, say $500. In the meantime they have become acquainted with some other immigrant who is doing the same thing. These two will join their resources

and buy a "business," as it is called. This means that they rent a farm at $25 to $30 an acre cash, and buy their cows, horses, wagon, mowing machine, and horse rake for $3,000 to $5,000, paying perhaps $1,000 down.

After a few years they get the cows paid for. In the meantime their cows have outgrown the ranch. The lease having expired, each partner takes his half of the cows, and going to Patterson colony or elsewhere buys a farm, mortgaging the cows, to raise money for the first payment. They are on the way to farm ownership. It is often a long, hard pull, but those that remain to tell the tale have prospered and are usually well contented. The failures, one does not see, because they are gone and forgotten.

The important question for future land-settlement colonies is, where they will get their settlers, since they no longer can come from the sources which in the past have permitted the development of American agriculture. All land-settlement agencies, both public and private, must consider, in the immediate future, where colonists are to be obtained.

### FINANCIAL STATUS OF 131 OWNERS

Interviews were had with 131 residents, owning 4,830.84 acres. The purchase price as reported by the owners was $346.52 per acre. All farm lands, irrigated and unirrigated in California, were valued in 1900 at $105 an acre.

The average area of the land owned by these 131 farmers was 36.88 acres each. However, this does not represent the average size of the operation, since, among 163 persons interviewed, the average area of owned, or rented, or owned and rented land was 50 acres. For every 3 acres of owned land there is 1 acre of rented land. This disposition to increase the activity of the enterprise by renting additional acres is significant.

Holders of 20 acres or less do not usually make an independent living from the land. They either rent additional land, or they or some member of their family is engaged in outside employment.

Some of the owners of properties of 10 acres or less are poultrymen. They make a living *on* these small areas, but they do not make a living *from* them. In the Petaluma district experience demonstrates that it takes 2,500 laying hens to support a family in what we consider American comfort. These commercial poultrymen spend 60 per cent of their gross sales for feed. This means that it requires at least 40 additional acres for each 1,000 hens kept, or a flock of 2,500 hens requires 100 acres in order to support a family. Contrary to popular opinion, poultry raising is not an intensive form of agriculture. It is nothing against poultry raising to say that dairying, fruit raising, and vegetable growing produce a greater return per acre.

Aside from poultry raising, the tracts of 10 acres or less serve chiefly as places of residence for people who have other sources of income. For example, a day laborer pays $30 an acre for 10 acres of land. His gross income from the land is less than the rent, but according to the way he estimates it, he lives in a good residence for a net rental of about $8 a month. Something like one-half the people of the colony own 20 acres or less. Their real occupations run the gauntlet of possibilities from an active minister of a church, who raises apricots on his land, to the day laborer who keeps a cow and a few chickens. The situation reminds one of people who make a living by taking in each others' washing.

The survey thus far indicates that a man between 30 and 50 years of age, in good health, who owns or operates 40 acres of good alfalfa and milks a string of 25 cows, may have a gross income of $3,000. If he has the land paid for he will be able to live in comfort and educate from three to five children. If he has paid $16,000 to $20,000 for his property, and has a mortgage of $10,000 to $12,000, payment of the interest on this investment requires the strictest economy. An examination of 131 dairymen and other farmers shows an investment in round numbers of $17,000 each in land and buildings, with debts of $5,000, leaving an equity of $12,000 each. Of the 131, no debts beyond current bills are reported by 28. The average indebtedness of the remaining 103 is $6,670.

Some of these ranchers paid from $400 to $500 an acre, and even at these high prices are reducing their indebtedness and caring for their other obligations. Every now and then a rancher loses his farm, but for the most part the financial situation is well in hand.

### INCREASED ASSETS

If before visiting this colony I had been told that a farmer in the best irrigated sections of California could pay $400 an acre for good alfalfa land, support a family on it, and pay the principal and interest at 5 or 6 per cent, let alone 7 per cent, I would have said that it could not be done. Indeed, I have been advising my students not to pay more than $300 an acre and shall continue so to tell them. However, 131 farmers in the colony have paid nearly $350 an acre, and have added buildings to the value of about $75 per acre since purchase. Thus the land and present buildings have cost $420 an acre. That these farmers have been able to support their families and reduce their indebtness is shown by a study of the increased value of their holdings during an average period of 10 years. It has been possible to make an intimate financial study of 125 resident owners, some of the work having been accomplished with the aid of an interpreter.

The average size of the area operated—that is, either owned or owned and rented—was 44 acres. These 125 men brought to the colony assets worth nearly a million dollars and, by outside employment or otherwise, have earned during an average period of 10 years an additional $133,000. Their net assets (that is, gross assets less mortgages and other debts) as estimated by themselves are $1,761,252. In other words, the average assets per farmer at the time of purchase were $7,688, and the present average assets are $14,090. The increase in net worth per farmer per year has been $554. The rising value of land and buildings over first cost has been less than 9 per cent. Six of these farmers had neither increased nor decreased their net worth. Sixteen had decreased assets of $405 each, while 103 had increased assets of $7,355.

The optimist and pessimist both can find plenty of material. For example, one man came to the colony in 1919 worth $22,000 and now estimates his assets at $5,500, a decrease of $16,500. Another arrived in 1917 with $4,000 and now states his worth to be $20,750, an increase of $16,750.

One day I interviewed two farmers, one 69 and the other 71 years of age. Their farms were about the same size and both raised grapes. Both were Scandinavians. The man who had passed three score and eleven, I found in his vineyard trimming his vines. His first remark was that when he bought the property he had been sold into slavery; he was in debt, and had he remained in Minnesota he would now be worth $13,000. The other remarked, after showing that his security was gilt-edged, "I do not owe any man a dollar, and I have money enough in bank to live upon until the next crop."

After completing the record of the financial status of one pessimist, I remarked: "You haven't done so badly after all," to which he replied with explosive emphasis: "Just think of what I would have made if I had invested in Los Angeles!"

The wife of a small farmer had a sounder point of view when she remarked that had they remained in town her husband would have earned $1,800 as a postman, and she $1,000 as a trained nurse, which amount equaled the gross income from their farm—a quite satisfactory income considering the size of the farm.

There is not time and I have no desire to summarize or conclude. I am merely a recorder of facts, hoping to be of assistance to the one who in the future shall write a history of land settlement, public and private. I may suggest in closing, however, the influence of this colonization on public welfare.

The county assessor gives the valuation, in 1910, of the land now included in this colony as $422,090. The present assessment (1926)

is $2,726,700. In addition, the valuation of the village of Patterson in 1926 was $435,180.

At the beginning, the assessed valuation of this colony was less than $500,000; 16 years later it was $3,000,000. In 1910, it supported 6 families, under rather primitive conditions. Now, approximately 300 families live on the land, and 100 more live in the village, enjoying the advantages of schools, churches, and other social facilities of a high order.

TABLE 1.—*Character and size of ownership*

| | | |
|---|---|---|
| All operators visited | | 163 |
| Owners | | 155 |
| Tenants | | 8 |
| Owners who rent additional land | | 51 |
| Total area owned or rented | acres | 8, 297 |
| Total area owned by operators | do | 6, 251 |
| Average size of 163 enterprises, owned, rented, or owned and rented | acres | 50. 9 |
| Average holding of those who rent no land | do | 45. 15 |
| Average size of tenant farms | do | 46. 28 |
| Average holding of 51 owners who rent additional land | do | 59. 89 |
| Average area owned by owners who rent land | do | 29. 98 |
| Average area rented by owners who rent land | do | 30. 39 |

TABLE 2.—*Returns from cows—Total acreage, alfalfa acreage, cost of additional feedstuffs or pasturage, number of cattle and cows, and total gross income and total sales of cattle and dairy products for 81 dairymen who milked 10 or more cows*

| | Number | Total | Per farm |
|---|---|---|---|
| Acreage operated | 81 | 4, 567. 31 | 56. 39 |
| Alfalfa acreage | 78 | 3, 184. 45 | 40. 83 |
| Additional cost of feedstuffs or pasturage | 60 | $24, 450 | $417. 53 |
| Cattle, 2 years old and over, Jan. 1, 1917 | 81 | 2, 652 | 32. 74 |
| Cows milked during 1926 | | 2, 164 | 26. 74 |
| Total farm income | | $319, 255 | $3, 941. 42 |
| Total sale of cattle and dairy products | | $305, 785 | $3, 775. 12 |
| Total income per total acres operated | | | $69. 92 |
| Total income per acres of alfalfa | | | $100. 50 |
| Income per animal for all cattle | | | $120. 40 |
| Dairy income per cow milked | | | $141. 30 |

TABLE 3.—*Returns from fruit—Total acreage, fruit acreage, gross farm income and gross fruit income in 1926—45 farms*

| | |
|---|---|
| Total acreage | 1, 851. 35 |
| Acreage per farm | 41. 14 |
| Total fruit acreage | 1, 010. 78 |
| Fruit acreage per farm | 22. 46 |
| Total income per farm | $3, 557. 67 |
| Fruit income per farm | $2, 757. 38 |
| Farm income per acre | $86. 48 |
| Fruit income per acre | $122. 77 |
| Nonfruit income per acre | $42. 84 |

TABLE 4.—*Returns from beans—Total acreage, bean acreage, gross farm income and gross bean income in 1926—29 farms*

| | |
|---|---|
| Total acreage | 1,382.29 |
| Acreage per farm | 47.67 |
| Total bean acreage | 596.50 |
| Bean acreage per farm | 20.59 |
| Total farm income | $2,308.03 |
| Farm income per acre | $48.42 |
| Bean income per farm | $799.62 |
| Bean income per acre | $38.85 |
| Nonbean income per acre | $56.42 |

TABLE 5.—*Cows, fruit, and beans compared*

| | Dairy | Fruit | Beans |
|---|---|---|---|
| Number of farms | 81 | 45 | 29 |
| Total acreage | 4,467 | 1,851 | 1,382 |
| Acreage per farm | 56 | 41 | 48 |
| Total farm income per farm | $3,941 | $3,558 | $2,308 |
| Farm income per acre | $70 | $86 | $48 |

## *EXPERIENCE OF THE HAWAIIAN HOMES COMMISSION IN CARRYING OUT ITS WORK*

*By Rev. Akaiko Akana*

*Member, Hawaiian Homes Commission, Honolulu, Hawaii*

Before presenting to this audience a sketch of the practical experience of the Hawaiian Homes Commission in carrying out its work, allow me to invite your attention to the conception and development of the idea of the rehabilitation of the Hawaiian people which finally culminated in the creation of the Hawaiian Homes Commission act, under which the Hawaiian Homes Commission has been operating. This, in some measure, will help us to realize something of the cause underlying the spirit and purpose animating the homesteaders who at present are pioneers of the "back-to-the-soil movement" and through whom the Hawaiian homes act is finding practical expression not only at Molokai but at Keaukaha on the island of Hawaii.

*Conditions prompting the idea of rehabilitation.*—As far back as the year 1912 the Hawaiian people, especially their leaders, were much concerned over the preservation of the race. There had been a rapid decrease in the number of pure-blooded Hawaiians due to intermarriage and excess of the death rate over the birth rate. This alarming situation, as special investigation revealed, was due largely to what might be termed a "hedged-in" condition of life which was unnatural to the Hawaiians, a people accustomed to the open, whose

life had become more restricted. In addition, there was a lack of practical knowledge concerning dietetics, of prenatal care, care of the young, and of the sick. Congested conditions existing among the poor of the city of Honolulu deprived the poor of the opportunity to raise their own food supply, of suitable home surroundings, and of proper family life.

There was also economic pressure, somewhat crushing in effect—the high cost of food and clothing and the scarcity of employment. Among the very poor many at Iwilei, Honolulu, were living in mere shelters built of cracker boxes and pieces of lumber gathered from rubbish piles, and with insufficient food. There lived in the tenements several families occupying apartments containing only two or three rooms each. This condition was discovered in Liliha, Beretania, King, and Kukui Streets, on the north of the city; also at Kakaako, and in many of the smaller sections of Honolulu.

Furthermore, the pressure of the more expensive standard of modern life and attire sapped the small income of the average bread-winner. This condition affected all classes of Hawaiians. Much that was formerly generally accepted as suitable, and which was cheap and within the reach of all, was displaced because of the demands of modern life and dress. These conditions caused serious inroads on the saving accounts of the race.

A result of this situation was a changed attitude on the part of the youth, and acceptance of a false ideal of life that looked down upon hard work as demeaning, and consequently below the acceptance of an educated person. This was one of the severest blows which struck the Hawaiian race in its struggle to gain a place in the transitional life of the Territory. Because of this unfortunate attitude, which has continued to this day, many of the so-called ordinary occupations of life were abandoned, only to be snapped up by aggressive orientals, whose perfect delight it is to work and earn something each day as it comes. For this reason, splendid vocations, such as carpentry, painting, masonry, fishing, gardening, general farming, poultry, and animal husbandry passed into other hands.

The loss of this remunerative work increased tremendously the difficulty of securing employment. The much-sought-for "white-collar" jobs were limited, and the "white-collar" businesses could not adequately supply the so-called "educated" ones with work. Consequently we had constantly to deal with the economic problem of the poor and of the educated; and it may be well to remind those of Honolulu and of Hawaii that the problem, even at this time, is far from being solved.

Another problem was the inroad of diseases of all kinds, and chief among these was tuberculosis. These diseases found most fertile soil among the natives, whose physical constitution was hardly

immune to their attacks. Each year witnessed the sad spectacle of death taking a disproportionately large toll of Hawaiian lives, especially among the pure Hawaiians and of children under a year old. The average death rate among the Hawaiians was double that of any other race in the islands, and every year found fewer of pure Hawaiian blood in the Territory. Of every three babies born to Hawaiians only one lived to the end of the first year.

The attractions of the city, its social life, amusements, and other features, were drawing Hawaiians away from their country homes. In many places rural homes were sold or abandoned, and the family moved to Honolulu. Valuable country and city lands were frequently sold or mortgaged in order to procure the means for enjoyment of social privileges and pleasures of city life. Moving-picture shows occupied a regular place in the budget of many families, even at the sacrifice of comfort, convenience, and sometimes of food. This condition partly explained the undernourished condition of many Hawaiian children in schools of the city. These children, some of whom were located along Liliha, North King, Beretania, Kukui, and Vineyard Streets, also at Kakaako, often came to school with not enough food in their stomachs to sustain their physical and mental strength; the breakfast of many consisting of only cheap Chinese coffee.

Fortunately for these children and for the underfed children of other nationalities, the Child Welfare Committee of Hawaii, through its special committee, instituted "experimental feeding" of the anæmic school children in public schools of the city. The experiment met with such remarkable success that it was continued; and this work became ultimately a powerful agency in removing the cause of the poorly developed bodies and retarded mentality of the children, which were the underlying cause of serious problems of discipline. Mrs. Frederick E. Steere, secretary for six years of the central committee of Child Welfare of Hawaii, had a very illuminating report of this work in the Hawaii Educational Review for January, 1912, and in the issue of The Friend for that month. According to Mrs. Steere, Mrs. Wallace Farrington, wife of the Governor of Hawaii, was responsible for the inauguration and supervision of this work which has become vital to the welfare of the schools.

### ORGANIZING FOR REHABILITATION

These circumstances, and others which might be mentioned, caused considerable alarm among those most concerned regarding the welfare of the Hawaiian people. With Prince Kalanianaole, the late and greatly lamented delegate to Congress from Hawaii, at the head, many of the Hawaiian leaders in Honolulu met regularly to discuss and devise ways and means by which the situation might be relieved. In these discussions, which lasted for months, plans for a protective

association were evolved, and organization was effected in November, 1914. With this body as a nucleus, general conditions among the Hawaiian people were studied, and much was done in the way of benevolence.

But it was not until the latter part of the year 1915 that officers of the organization and others interested became convinced that the only effective way to assist the race was to help the people help themselves, and that too much benevolence was an indication of weakness. "Back to the land," therefore, was one way, and, perhaps, the surest way of accomplishing this. About the same time, as the result of agitation, a strong sentiment was created against tenement conditions in the city. This provided for officers of the organization an incentive to develop the "back to the land" idea. In one of the meetings of the Hawaiian Civic Club the tenement situation was widely discussed, and a special committee was appointed to cooperate with the officers of the Hawaiian Protective Association in finding a solution for this problem. Ex-Senator John Wise headed the committee. Under his leadership the committee discovered some lands on Oahu, and these were reported to the Hawaiian Civic Club. Lacking definite plans, the matter was referred back to the committee. Senator Wise, cooperating with Mr. Noa Aluli, an attorney, worked on the idea for some time. Finally a definite plan was reached, and from all appearances it was satisfactory to the Hawaiian Protective Association.

When the special commission from the 1919 Legislature of Hawaii went to Washington, D. C., in 1920, Senator Wise presented the plan to the Committee on the Territories, and a bill for rehabilitation of the Hawaiian people was formulated. This, however, did not go through Congress, but was referred back to the Hawaiian Legislature for reconsideration. A new bill was then formulated and, after many amendments to the original plan, it finally passed and was sent to Washington. The bill received the approval of Congress, and thus became a part of the organic act of the Territory of Hawaii. This bill, entitled "The Hawaiian Homes Commission Act," furnished the basis for the operations of the Hawaiian Homes Commission, whose practical experiences we are to consider at this time.

From this brief and hasty survey it is apparent that enactment of the Hawaiian homes act, for the benefit of the Hawaiian people, occurred as the result of long endeavor, and not as something that just "happened." The Hawaiian homes act was begotten of severe experience, of education, of publicity, of agitation, and of a general feeling of unrest and of constant striving. Coming, as it did after a long and severe struggle for victory, it entered a period of great realization on the part of the Hawaiian people; realization of the

great value of out-of-door life, of hard work, of education by practical experience, of farm life, of thrift, and of business enterprises. There was a realization of the lack among the people of that well-rounded development which the life and problems of the new day demanded.

### REHABILITATION PLAN AND WORK

Coming now to our subject and to the experience of the Hawaiian Homes Commission in carrying out its work, let me present the following:

1. *Organization under the Hawaiian homes act.*—By section 202 of the act a commission, known as the Hawaiian Homes Commission, was established. This commission is made up of the governor of the Territory and four citizens appointed by the governor, by and with the advice and consent of the Senate of the Legislature of Hawaii. At least three of the appointed members of the commission must be native Hawaiians. The governor of the Territory is chairman of the commission.

The executive officer and secretary, operating for the commission, is one of the commission's own members designated by the commission for that office.

In carrying out the work of the Hawaiian homes act, the commission employs an agriculturist as field superintendent and to give instruction and guidance to homesteaders on their farms.

For construction work of the commission, such as surveying, fencing, road building, and water development, an engineer is employed. Other employees and helpers of the commission are secured according to the needs of the executive secretary, the field superintendent, and the engineer.

2. *The field of operation.*—Available lands for the operation of the commission include an area of approximately 203,000 acres, distributed as follows: Hawaii, 103,300 acres; Maui, 31,000 acres; Molokai, 33,700 acres; Oahu, 13,000 acres; and Kauai, 22,000 acres. Of this area, about 22,900 acres on the island of Molokai, and 2,000 acres at Keaukaha on the island of Hawaii are being used by the commission for its work.

3. *The experimental period.*—The Hawaiian homes act provides that, for a period of five years after the first meeting of the Hawaiian Homes Commission, activities of the commission be confined to Molokai and Waimanu, Keaukaha, and Panaewa, on the island of Hawaii. This period marks the experimental stage for testing out the rehabilitation scheme. The worth of the idea and sincerity of purpose of the home builder are to be definitely determined within this space of time. In case of success, according to the provisions of the Hawaiian homes act, the remainder of the lands will then be opened for the commission's operations.

4. *Occupancy of Hawaiian home lands.*—The commission is authorized to lease, not to sell, to native Hawaiians the right to occupy and use, within the following acreage limits, tracts of Hawaiian home lands:

(*a*) Not less than 20 nor more than 80 acres of agricultural lands; (*b*) not less than 100 nor more than 500 acres of first-class pastoral lands; (*c*) not less than 250 nor more than 1,000 acres of second-class pastoral lands; (*d*) one-half of an acre, or more, of any class of land may be leased as a residence lot.

Title to the lands so leased remains with the United States, thus eliminating the menace of land speculation and conserving for constructive purposes of the Government the remnant of Government lands in Hawaii.

Leases so made are subject to the following conditions: (*a*) The lessee shall be a native Hawaiian, a descendant of the races inhabiting the Hawaiian Islands previous to 1778, and possessing not less than one-half of native blood; (*b*) the lessee shall pay a yearly rental of $1 for the tract, and lease shall be for a term of 99 years; (*c*) the lessee shall occupy and commence to use or cultivate the tract as his home or farm, within one year after the lease is executed; (*d*) the lessee shall thereafter, for at least such part of each year as the commission may by regulation prescribe, so occupy and use or cultivate the tract on his own behalf; (*e*) the lessee shall not in any manner transfer to, or mortgage, or otherwise hold for the benefit of any other person, except a native Hawaiian, and then only upon approval of the commission, or agree so to transfer, mortgage, pledge, or otherwise hold his interest in the tract. Such interest shall not, except in pursuance of such a transfer, mortgage, or pledge to, or holding for, or agreement with a native Hawaiian, be subject to attachment, levy, or sale upon court process. The lessee shall not sublet his interest in the tract or improvements thereon. Upon the death of the lessee, his interest in the tract and improvements thereon shall vest under the limitations provided for homesteads in section 403 of the Revised Laws of Hawaii; and (*f*) the lessee shall pay all taxes assessed on the tract and improvements thereon. In case of failure so to do, the commission shall thereupon pay the taxes and issue a lien therefor as provided in the act. It is also provided in the act that, for the first five years from the date of lease, the lessee shall be exempt from all taxes.

Whenever the commission has reason to believe that any condition or provision has been violated by the lessee, or his successor, the commission shall give due notice to such lessee or successor, and afford an opportunity for a hearing. If upon such hearing the the commission finds that the lessee or his successor has violated any condition in respect to the leasing of such tract, the commission may

declare his interest in the tract and all improvements thereon to be forfeited and the lease in respect thereto canceled, and shall thereupon order the tract to be vacated within a reasonable time. The right to the use and occupancy of such tract shall revest in the commission, and the commission may take possession of the tract and the improvements thereon.

5. *The revolving fund.*—To carry out the purpose of the Hawaiian homes act, there is established in the treasury of the Territory a revolving fund known as the Hawaiian home loan fund. The entire receipts derived from any leasing of available lands and from water licenses, and 30 per cent of the Territorial receipts derived from the leasing of cultivated sugar-cane lands, are covered into the fund until the amount of moneys paid therein from these three sources alone shall equal $1,000,000. In addition to these moneys and moneys covered into the revolving fund in the way of installments paid by lessees upon loans made to them there shall be covered into the said fund all other moneys received by the commission from any source whatsoever.

6. *The loans.*—For the purpose of erecting dwellings on any tract and for other permanent improvements thereon, for the purchase of livestock and farm equipment, and for otherwise assisting in development of the tracts, the commission is authorized to make loans to the homesteaders. The amount of loan to any one borrower, outstanding at any one time, shall not exceed $3,000. To the holder of a residence lot the amount of loan outstanding at any one time shall not exceed $1,000.

Loans shall be repaid upon an amortization plan by means of a fixed number of annual installments sufficient to cover the interest on the unpaid principal at the rate of 5 per cent per annum, and such amount of the principal as will extinguish the debt within an agreed period not exceeding 30 years. The moneys received by the commission from any installment paid upon such loan shall be covered into the revolving fund. The payment of any installment due may, with the concurrence therein of at least three of the five members of the commission, be postponed in whole or in part by the commission, for such reasons as it deems good and sufficient, until such later date as it deems advisable. Such postponed payments shall continue to bear interest at the rate of 5 per cent on the unpaid principal and interest. And, in case the borrower's interest in his tract, or his successor's interest therein, is transferred to or mortgaged, pledged, or otherwise held for the benefit of any native Hawaiian, or agreed so to be transferred, mortgaged, pledged, or otherwise held, the commission may, at its own option, declare all annual installments upon the loan immediately due and payable or permit the successor to the borrower's interest in the tract to assume the contract of the

loan. In case of the borrower's death the commission shall permit the successor to the borrower's interest in the tract to assume the contract of the loan.

The commission directly controls expenditures made by homesteaders from their loans. By a process of requisition wants of homesteaders are made known to the executive secretary, and through him to the commission. These wants are studied and weighed; and if in the opinion of the secretary they are worthy of approval he recommends accordingly and the commission approves them. The secretary then proceeds to purchase the material desired at the most reasonable price possible, and the same is sent or shipped to the homesteaders. All bills thus contracted by homesteaders are paid by the secretary at the office of the commission. In this manner unnecessary purchases, waste, and extravagance are checked, and purchases of homesteaders are kept within the limit of their means or the amount of their loan.

7. *The process of selecting homesteaders.*—Unlike the usual method of homesteading Government lands, the Hawaiian Homes Commission has adopted a certain procedure in selecting those who may go on Hawaiian home lands. Applicants are listed by the secretary, and names submitted to the commission. Each individual applicant is investigated carefully, and his character, conduct, and aptitude for farm work weighed. In the event that the commission does not know the applicant the secretary proceeds to secure the necessary information. Should the applicant prove satisfactory, the secretary recommends accordingly, and the commission gives its approval. The applicant then is checked and assigned an individual number according to his order of time in filing application. After selection is made, cards bearing the numbers of the selected homesteaders are cast into a container and one drawn by each individual, thus determining their order in selection of lots.

While application blanks furnish information required by the commission in selecting homesteaders, personal contact with applicants is of great value in making wise choice. The secretary finds it necessary sometimes to hold up applications, and the frequency of the applicants' calls and inquiries made assist in determining their earnestness of purpose and sincerity of interest.

By this process of selection the commission is enabled to eliminate poor material, and to send to the land those who give promise of realizing the high ideal to which the rehabilitation scheme points. The week-end farmers, the easy-going drones, and obstructionists have absolutely no place in the commission's plan of homesteading. Those who are lazy must learn to help themselves before they can hope to gain the attention of the commission. This rule applies also to those living in congested tenement sections of the city and who may be anxious to have a farm on which to live.

8. *Expert advice and guidance.*—Nothing inspires the farmer more than fruitful return for his effort, but this is possible only when the causes of failure are removed. In this capacity expert advice and guidance, which are ready at hand, become the saving power in the situation. The farmer realizes his opportunity to gain experience while developing his land. The expert agriculturist is with him to help bring that opportunity to the maximum possibility. The farmer sees his need, and the expert is there with him to teach and to direct him in meeting that need effectively and scientifically. By this system of farm supervision, the homesteaders under the Hawaiian Homes Commission may be considered pupils in a great agricultural school for practical agriculture. At this point of contact, where work and instruction go hand in hand, right on his farm, the homesteader realizes the paternal interest of his Government and appreciates the protecting care given to insure his success. The inspiration which this realization gives sustains the homesteader's will to forge ahead and make accomplishment his daily desire.

It may be mentioned that, had the Hawaiians received with their religious instruction of the past such instruction, guidance, and supervision of land development as the Hawaiian Homes Commission is giving to-day, they would have realized the practical value of their lands, and they would not have given them away or sold them for the ridiculously small sums of money which they received. Many natives might now have been prosperous.

## RESULTS OF THE COMMISSION'S WORK

The results of the commission's work during the experimental period of five years just ended may be summarized as follows:

1. *Confidence of the Territory gained.*—In inaugurating the work, the commission was determined, before anything was done to the land, to secure expert advice. A group of skilled agriculturists was invited to make a survey to determine the agricultural possibilities on the island of Molokai, where the first homesteading operations were to begin. Dr. Elwood Mead, now in charge of the United States Bureau of Reclamation, and who is present with us, was also invited by the commission. The result of the survey by these experts and their suggestions and recommendations were most valuable guides in the commission's subsequent activities. This preliminary action of the commission created a deep impression in the Territory. It established confidence in the commission's judgment and strengthened the feeling of security among those who were planning to become homesteaders under the act. It was most gratifying to the commission, in launching a project of such importance and magnitude, to be assured of public interest and of the cooperation of the business community.

2. *Homesteaders on the land to stay.*—In the experimental period that has passed since the lands were opened by the commission, not a single homesteader has left his farm. On the other hand, the homesteaders have proven themselves a hard-working and contented people. They have come to love their new homes and consequently are interested in their development. Already there are 116 homesteaders and their families on the land at Molokai, a total of 700 persons, who may be seen every day cultivating and taking care of their farm lots. Men, women, and children share the pleasure of tilling the soil and of making it productive. Neat homes may be seen dotting the residence lots along the shore where dwell those interested only in home lots while earning their living by occupations other than farming.



HOUSE ON ONE-ACRE LOT, HILO, HAWAII (BUILT BY OWNER AT COST OF $80)

At Keaukaha, Waiakea, Hawaii, 80 families occupy house lots prepared by the commission. The majority of them are from the Hilo tenements. These hard-working people have cleared their lots and built their homes at their own expense. Since 1924, when they began moving on the land, they have transformed that rock-bound tract into a settlement which has merited the admiration and praise, not only of the commission, but of the people of Hilo and of others in the Territory who have seen it. With good roads, a splendid water system, and an increasing enthusiasm and community pride, these enterprising people have every promise of success in their immediate future.

Vision has reared upon that span of solitary waste a structure of newborn hope where many, with a sense of gratitude and with ambition, thrift, enterprise, and hard work, but whose circumstances are restricted and limited, may find a freedom and an opportunity in

which to develop their powers and fit themselves for the privilege of worthy citizenship.

3. *The demonstration farm.*—With inauguration of the commission's work, a demonstration farm was started for the purpose of working out in a practical way the different lines of endeavor in which the farmers might be interested. This served its purpose for a while, but as the commission's operations advanced this demonstration farm was found unnecessary. Experience proved that, with the numerous experiment stations in the Territory from which to obtain needed information and personal assistance of experts, and with the service of the University of Hawaii at the disposal of the commission, the best and most practical demonstration farm was the homesteaded area itself—farm lots under cultivation by the homesteaders. So the demonstration farm was removed, and the field superintendent gave his entire time to the farmers. In this way the superintendent's experience and knowledge were applied directly to the homesteaders' problems as developed on their tracts.

4. *Gain in dollars and cents.*—The Hawaiian home lands, when the commission's operation became effective, were second-class pastoral lands. A large area, especially that of Kalamaula and the portion now occupied by the Kalanianaole settlement, was thickly forested with algaroba trees. The estimated value of the lands was only $1 per acre; they were rented at 5 cents per acre. Since becoming homesteaded (July, 1922) these same lands have assumed a new appearance of considerable promise and have greatly enhanced in value. Their approximate worth to-day is startling, as shown by report of the executive secretary.

*Kalanianaole tract*

| | |
|---|---|
| 184 acres of alfalfa lands (now estimated at $680 an acre) | $125,120 |
| 26 house lots | 26,000 |
| 376 acres of fruit land (at $100 per acre) | 37,600 |
| 1,800 acres of community pasture (at $10 per acre) | 18,000 |
| Total | 206,720 |
| Water and irrigation systems, buildings, fences, roads, and livestock | 225,000 |

*Hoolehua and Palaau tracts*

| | |
|---|---|
| 4,000 acres (at $200 per acre) | 800,000 |

*Keaukaha house lots*

| | |
|---|---|
| 80 lots (at $1,000 per lot) | 80,000 |
| Grand total | 1,311,720 |

Expenditures of the commission in accomplishing this were as follows: For roads, water development, and pipe lines, buildings, and other permanent improvements, $251,371.53; expenses on experiments,

development work and labor, $156,255; loans to homesteaders, $213,-393.04; total, $621,019.57. Of the amount loaned to the homesteaders, $7,282 has been paid back as principal and interest.

5. *Gain in health.*—One of the most gratifying returns for the money, energy, thought, and time put into the rehabilitation work has been the improved health and physical condition of the people on the land. Doctors' bills, which were frequent visitors in former homes of homesteaders while living in Honolulu, ceased to make their monthly appearance. Work, life in the open air, simple living and food, and interest in their new occupation and surroundings all combined to eliminate ailments and to put into the body the things of health and physical power. Since settlement of the lands at Molokai there have been 38 births; and out of a popluation of 700 there have been 11 deaths. Three of these resulted from pulmonary tuberculosis, 1 from accident, 1 died of poisoning, another was unattended, and 1 was born congenitally defective, leaving only 4 deaths due to preventable causes—a mortality of less than 1 per cent.

These figures, taken from Dr. E. S. Goodhue's report of west Molokai, show the salubrity of the settlements on Molokai and prove the real value of the rehabilitation scheme. With such a result, it is pleasing to note that the commission has received 581 applications for lands in the different subdivisions. A few applications have been declined and 293 granted. With the increase of interest on the part of Hawaiians, the number af applications will continue to grow.

6. *Community pasture.*—According to the statement of the executive secretary, the homesteaders now have about 500 head of cattle in the community pasture. This addition to their farm products is the result of their interest in animal husbandry. The commission has been careful, in providing the homesteaders with livestock, to see that the very best poultry and animals are secured. The service of a veterinarian has been employed wherever such service is needed for the protection of stock. It is gratifying to realize that up to the present moment no serious ailments have visited Molokai and that the farmers have been enjoying satisfactory returns from their chickens, pigs, and other livestock.

## PROBLEMS

In placing before you the returns for the effort put forth during these five years of experimental work I must not fail to mention the problems of the commission and homesteaders while developing the work. These problems may be enumerated as follows:

1. *Need for more irrigation water.*—The lower settlement of Kalanianaole has the advantage of possessing both mountain and spring

water, the former used for domestic purposes and the latter for irrigation. The upper lands of Palaau and Hoolehua are supplied with mountain water for domestic use but are without irrigation water. Rainfall, though it is abundant when it comes, is irregular. For this reason intensive cultivation will not bring out the maximum possibility of the soil. This condition therefore suggests the following lines of activity as possible solutions of this problem: (1) The diversion to the western side of the island of Molokai, through a system of tunnels, ditches, and pipe lines, of all water which is now wasted on the north side; (2) collection, through a system of reservoirs, of the wasted surface water which comes from the rain, thus conserving a constant water supply as well as feeding the artesian basin of the island; and (3) enlargement of the forest reservations of the island in order to encourage rainfall and help to retain much-needed moisture in the ground.

2. *Pests and plant diseases.*—Pests and plant diseases occur regularly on lands of homesteaders. Watermelon, tomato, pumpkin, and other farm product have suffered; but the farmers, under the guidance of the field superintendent, have been vigilant in this interesting competion between the producer and the consumer; and so far the producer appears to be ahead in the game.

3. *Marketing farm products.*—Severe competition exists between local food producers and producers on the mainland. Locally, orientals lead in control of the market, as by their manner of living they are able to undersell their products. But, in spite of this condition, there is plenty of opportunity for sale of the best fresh foodstuffs, and consumption of such products is increasing. The population of the Territory has been growing each year, and it will continue to grow. Tourists in increasing numbers visit Hawaii regularly. Food in abundance, therefore, must be on hand. Here is the farmer's opportunity, and the task which is most imperative now is to develop a system of marketing which will adequately hold the consumer to the producer. Important factors in this undertaking are price, quality, method, and regularity of supply.

In mentioning these problems I do not mean to set them up as being unusual or as something peculiar to Molokai. They are common problems, and are shared by all farmers in one way or another. But they are problems which challenge to the utmost modern intelligence and skill and long-suffering patience. Their effect in Hawaii is far-reaching, and each step gained toward their solution means the strengthening of the economic basis, especially of the food supply of this Territory.

## CONCLUSION

Senator Smoot, in his address before the Hawaiian Civic Club, stated that if the project attained 25 per cent success he would consider the entire rehabilitation scheme a success. I am very glad to

inform this honorable body that the project is not only 25 per cent success but is 100 per cent success. It has now received the hearty indorsement of the present Legislature of Hawaii, in session at this time, and the resolution voicing such indorsement and asking further authorization of Congress and approval of the Secretary of the Interior of the United States for expansion of the activities of the Hawaiian Homes Commission has been signed by the Governor of Hawaii.

With the successful completion of the work during this experimental period; with a new realization of the implications of this initial step; with a new order of personal effort evolved; with courage, vision, and fortitude sustaining our will to attain greater achievements; and with God's hand still guiding, may we launch forth into the further expansion of this most important project and be enabled to make more helpful discoveries, plant new hope, establish stronger faith and conviction, exalt the nobility and dignity of work, and of the satisfactions and independence of life on the farm. And upon the foundation of the essential elements of gratitude, health, vision, hard work, education, thrift, enterprise, social intercourse, cooperation, and experience in discovering true values there may be reared in this commonwealth of the nations in Hawaii the permanent structure of an efficient democracy in which may be realized not only the satisfaction of material prosperity but also the will and the spirit of the Divine.

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## *JEWISH RECLAMATION OF PALESTINE*

*By Gershon Agronsky*

*Director of Information of the Palestine Zionist Executive, Jerusalem*

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The tribute to the efforts of the Zionist organization expressed in the admirably worded invitation it received to send a representative to this important international gathering is deeply appreciated by the leaders of this organization. "The world," wrote the Secretary of the Interior, "knows of the plans of the Zionist organization in the reclamation of Palestine. What has been done and what is proposed will interest the conference at Honolulu, and you are cordially invited to send a representative." I am directed by Dr. Chaim Weizmann, president of the World Zionist Organization, and Mr. Louis Lipsky, president of the Zionist Organization of America, to which in the first instance the invitation was addressed, to express to the Secretary of the Interior their heartfelt thanks for the gracious recognition of the work of the Jewish people in the reclamation and rehabilitation of Palestine as the national home of the Jewish people.

The task on which the Zionist organization is engaged, and has been engaged during the last few decades, is one which requires for its accomplishment an abundance of confidence in the will of the Jewish people to achieve their own salvation, faith in the good will of the enlightened world powers, particularly in that of Great Britain which holds the mandate for the Holy Land, a profound understanding of the problem, great skill, limitless patience, constant perseverance, and generous means. But, above all perhaps, the Jews must possess a ready and unflagging willingness to learn from others better versed in the reclamation of waste places. And it is because the Jews as a people have, through their exile, lost the cunning of looking after themselves racially that the Zionist organization was happy to dispatch a representative to this gathering, where he can learn more than he can hope to impart.

The sons and daughters of a race homeless for 20 centuries, driven inexorably by this homelessness to try to attain the stature of nationhood, have been returning to the narrow coastal strip on the Mediterranean which is called Palestine, the southern boundary of which debouches below the 31° latitude into the Sinai Desert. The northern frontier has been fixed at a point north of Haifa, and the eastern border is the Jordan River. Much territory anciently of Palestine has been included either in French Syria to the north and northeast or in the independent principality of Transjordania, separated from the Holy Land by the sacred river. The delimitation "from Dan to Beersheba" has had placed upon it by the diplomats who recast the world after the Great War, a narrower interpretation than the Bible foreshadowed, or statesmanlike prevision of national economy should have dictated. In its present boundaries the country's area is not more than 20,000 square kilometers, or about that of Rhode Island. Of its 20,000,000 dunam (or 5,000,000 acres) about half is unsuitable for cultivation, consisting of sand dunes, rocky mountains, deserts, and lakes incapable of immediate development. So far few natural resources have been discovered. A notable and valuable exception is the Dead Sea, with its rich mineral deposits. The salt of the Dead Sea is estimated to constitute 25 per cent of the strong brine. Of the, roughly, 30,000,000,000 tons of mixed salts, 1,500,000,000 tons consist of potassium chloride.

### ORIGIN OF THE ZIONIST MOVEMENT

Yet the lure of this seemingly poor and unattractive strip of country, at the very crossroads of ancient civilization and of what is now called the Middle East, has ever been great. Especially has it beckoned to the Jew, who through the centuries of his exile has attempted now and again to regain his lost fatherland. The longing for Zion finally became crystallized into action, and the Zionist movement sprang properly into

existence. The movement has given birth to the Zionist Organization. The organization has given concrete constitutional form to the striving of the racially and nationally conscious Jew to regain possession of his ancient soil. In 1897 the first International Zionist Congress was held in Switzerland, representative of the many branches of the rapidly growing movement. From the remotest corners of the globe, wherever branches of the race were to be found, deputies gathered for this congress. A farseeing leader, Dr. Theodor Herzl, convened and presided over this congress, which has become a biennial event. The first congress proclaimed that "Zionism strives to create for the Jewish people a home in Palestine secured by public law." This program was internationally sanctioned as the World War was drawing to a close. The Allies decided that Palestine should not remain under the Turk. Great Britain, the prospective trustee for the Holy Land, issued in November, 1917, a pledge since known as the Balfour declaration viewing "with favor the establishment in Palestine of a national home for the Jewish people," and promising to use the Government's "best endeavors to facilitate the achievement of this object." As a matter of course, the declaration went on to pledge that "nothing shall be done which may prejudice the civil and religious rights of existing non-Jewish communities in Palestine or the rights and political status enjoyed by the Jews in any other country." France, Italy, Japan, and all the other powers on the allied side indorsed this declaration. The Government of the United States, by a joint resolution of the Sixty-seventh Congress, approved by President Harding September 21, 1922, gave its indorsement of this pledge incorporated by that time in the mandate for Palestine intrusted to Great Britain. This policy has repeatedly been declared as "not susceptible of change." The convention concerning Palestine signed in London December 3, 1924, between the United States and Great Britain confirmed the league mandate, wherein "Recognition has thereby been given to the historical connection of the Jewish people with Palestine, and to the grounds for reconstituting their national home in that country." The convention safeguards "for the United States and its nationals all the rights and benefits secured under the terms of the mandate to members of the League of Nations and their nationals, notwithstanding the fact that the United States is not a member of the League of Nations."

### COMPLEXITIES OF THE PROBLEM

Added to this sketch of the political auspices and facilities for Zionism, the briefest mention of the position and occupations of the Jews scattered over the globe, and numbering between fifteen and sixteen millions, is essential to an understanding of the complexity of the problem confronting the Zionist organization. The conditions just

described entitle the Jew to return and resettle Palestine as a matter of right and not of sufferance, and it is generally agreed that the return to Palestine is essentially a return to the soil. "Jewish agriculture," says Dr. Arthur Ruppin, the practical guide, philosopher, and friend of the Zionist settler, "is the base for the reconstruction of Palestine, and a Jewish peasantry the foundation of the new Jewish Commonwealth." These integral theses of Zionist philosophy are more easily grasped than carried into effect. Involved in their realization is a transformation of occupations. The occupations of the Jews throughout the world, to continue to quote Doctor Ruppin, resemble "a pyramid whose broad base consists of merchants, employees, and commercial middlemen. These are followed by industrialists, professionals, and artisans, and it is only when we reach the narrow apex of the structure that we find farmers and industrial laborers." To this basic difficulty should be added the hardship of a country impoverished by neglect, devitalized by primitive methods and, at the time the Zionist organization first undertook to colonize certain parts of it, full of malaria-breeding swamps, making for a "diseased" soil and sick cultivators. Despite these drawbacks, the Jewish cultivator must by his nature maintain in Palestine a western standard and yet compete economically with a native majority not accustomed to or requiring such a standard. The Jewish settler must travel alone along the rough road leading from primitive to modern agriculture. On this road he encounters the native peasant, whose sole equipment is a homemade nail plow, a pair of oxen, a threshing board, and a winnowing fan. As against the Jew's irreducible minimum of decent living conditions, there are the few personal wants of the Arab peasant, whose "greatest asset," to quote the director of agriculture of the Palestine Government, "is the power to endure hunger when times are bad."

## ACHIEVEMENTS OF THE ORGANIZATION

These obstructions notwithstanding, the Zionist organization may claim in all humility to have found a way to adequate Jewish colonization. To pave the way for extensive settlement, and before actual colonization is begun, swamps are drained and arid districts irrigated. These processes are going on daily. Much more, of course, remains to be done than has been attempted, and much that the Zionist organization can not even contemplate. There are still large swamps, great aridity, bare hills, and sand dunes. In short, there is before the Zionist organization a reclamation job which would tax the capacity and resources of a body more liberally endowed with experience and means; an enterprise calling for the powers of a government body and government resources.

And yet, although depending on voluntary contributions alone for money for the purchase of land for colonization, and for every other branch of its activity, the Zionist organization in its 17 years of agricultural experience is able to point to a number of concrete achievements in the sphere of agricultural colonization. It has introduced systematic sanitation before settlement of the sites selected for the village, has installed a water supply in every home, built roads connecting its settlements with the nearest highways, commenced small-scale afforestation in the neighborhood of the villages, and insisted upon the principle that a rural community in order to be able to afford a proper school, a physician, a nurse, and other necessary amenities, must consist of from 60 to 100 families. The Zionist organization is responsible for the importation of superior breeds of cattle from Syria and Holland, and superior breeds of poultry from America and Europe. It has introduced beekeeping, new fruit trees and vines, lucerne, sudan grass, and other green forage. It has established and is maintaining an agricultural experimental station, with fields and extension departments in various districts. Agricultural instructors visit the settlements regularly. Peripatetic bookkeepers have introduced a uniform system of accounting. Agricultural instruction for girls has been made an integral part of the program.

The Zionist organization is responsible also for the plan of a new type of Jewish village. Villages are of circular shape, dwellings being grouped around a center comprising public and communal buildings, the civic center being placed at the highest point. "Thus," says Mr. Richard Kaufman, a noted Jewish architect of Germany, author of the town and village plans, "it has been attempted to turn a colony into a living organism, possessing a natural and central culminating point, an organism which conforms also to all demands of hygiene, security, architecture, and æsthetics."

Most important, perhaps, of all its achievements is the attitude of the new settler. Everything possible is done to make permanent the attachment of the Jewish peasant and of the young generation to the soil. Agricultural work has been raised to the level of an ideal, to be passionately striven for. The man who among the thousands of Jewish laborers in the country is selected for settlement is the envy of all those who for lack of public funds or private means are obliged to mark time in some labor camp or follow indefinitely some trade in a town. This passion for agriculture has helped the settler in overcoming the lack of agricultural tradition and experience.

## LAND AND COLONIZATION POLICY

Two among other factors have contributed to this success.

One is the land policy adopted by the Zionist organization, the other is its colonization policy. With regard to land, the Mosaic principle

is applied insofar as modernly possible by the Jewish national fund, the land-purchasing arm of the Zionist organization. "The land is mine; it shall not be sold for ever." This is the basis of the national fund, which has raised in small subscriptions in the 25 years of its existence nearly $10,000,000, and invested most of it in the acquisition and improvement of some 50,000 acres of land. On this land are situated most of the holdings founded by the Zionist organization. The underlying idea is to create a peasantry, and not a class of land owners. The land passes to the possession of the settler under a hereditary lease for 49 years, with the option to the lessee or heir to renew it for a similar period. The cultivator enjoys full possession, but the land remains the inalienable property of the Jewish people. The leasehold gives the settler with small means a chance to start his farm unencumbered with mortgages except on equipment. He pays an annual ground rent, 2 per cent in the case of rural land, 3 per cent for suburban, 4 per cent for urban. The fund, the trustee for the contributors, thus safeguards against antinational and antisocial tendencies. The settler must be a farmer who not merely holds the land, but tills it. The leasehold serves as a guarantee that he will not abandon his plot through sale, or exploit it with sweated labor. A reservoir is thus found for his enthusiasm, which Doctor Ruppin describes as "the most precious thing created during the years of Zionist colonization." Personal labor is insisted on where the settler works nationally owned soil. No man is given more land than he and his wife can work. Twenty-five acres have been accepted as the area necessary for a mixed farm, where outside labor is to be used in exceptional cases only.

The Zionist organization claims no panacea in colonization. The systems encouraged are those calculated to appeal to the mentality of the Jewish immigrant. No sovereign solution has been found except the aim to take account of the psychology of the prospective settler. The colonization authorities of the Zionist organization do not regard themselves as representative of a company which uses the settler as an instrument of colonization. Rather they regard the Zionist organization as an equal partner with the settler. For this reason the settlers are allowed to choose their own form of colonization, provided always there is nothing antisocial or antinational in it.

### THREE FORMS OF COLONIZATION

The colonization system allows of three different forms. There is the group system, which is successfully employed in Australia. Assuming the members are working collectively with energy and good will for the common good, the supporters of the communal system maintain, in the words of an Australian friend of the system, that "the combined labor of a given number of men achieves more than

the same number of individuals who work separately." About 25 such groups, large and small, have been established and are financed by the Zionist organization. The fact that group settlement required a smaller initial investment than the individual settlement weighed heavily with the Zionist organization in the pre-war days, when the means at its disposal for settlement were ridiculously low. The group cultivates jointly the area allotted to it, without parceling it out among the members. Cooperation dominates every phase of social and economic life. Even the children are cared for in a communal children's home. The Keren Hayesod (Palestine Foundation Fund) supplies the money in the form of loans for the erection of living quarters and farm buildings, for the purchase of livestock, implements, and seed.

At the same time about 20 small holding settlements have been built and somewhat more firmly established by the Keren Hayesod. The 25 acres allotted each settler are supposed to suffice to feed his family and animals and leave a surplus in milk, eggs, fruit, and grain to sell and pay for taxes, interest, medicine, etc. There is cooperation in these settlements wherever the common interest is best served thereby. Machinery is bought and used, and produce marketed in common.

The third form of settlement is the large group which first came into existence in 1922. This system aims at the creation of villages where agriculture and handicraft are combined, the protagonist of this plan believing that, in addition to supporting a growing farm population, each group, if large enough, will develop also special branches of industry.

The amount of the loan granted by the Zionist organization from Keren Hayesod funds is about equal for the settlers of all types of villages. The cost of establishing a family on the land in Palestine is about $5,500. The purchasing price of the 25 acres is on the average $1,500, improvements cost another $500, and about $3,500 is reckoned as necessary to provide the settler with buildings and equipment. From 1921 to 1925, $1,825,000 was invested by the Keren Hayesod in agricultural colonization, without including the $200,000 spent on the experiment station and the moneys disbursed for administration, instruction, training, and afforestation, but counting only the amounts given out direct for settlements and credits to the settlers. Of this $1,825,000, the Zionist settlements founded before the war represent an investment of $120,000 only, small holding settlements established since the British occupation cost $860,000, and cooperative groups $696,000. Credits to settlers in the older colonies, including Jewish immigrants from Yemen, absorbed during the period under review, amounted to another $150,000.

One form of settlement the Zionist organization has not financed appreciably. This is the type of Jewish village existing in Palestine before the Zionist organization commenced its colonization operations. These were founded either by or with the financial assistance of Baron Edmund de Rothschild, the Jewish philanthropist of France. Some were established as far back as 1882. They are populous and prosperous villages, but the Zionist organization, looking for a short cut to colonization, interested primarily in planting firmly the largest number of cultivators on the smallest area, in the shorest time and at the least cost, was in no position to begin on an extensive system of individual settlement. The Zionist organization, however, has been more than willing to profit by the experiences of these older villages, and not to have repeated on its holdings some of their mistakes. Mixed farming, rather than plantations which are almost the sole support of the older village, is the basis of the newer, postwar settlements. Attachment to the soil is fostered in the settler, so that neither he nor his child will seek escape from what may easily become drudgery. Personal labor is elevated to a high mission, as opposed to the cheap hired labor which had and still has inevitably to be used by the planters upon whose acreage no limitation has been placed.

In these older villages there is also cooperation. Baron Rothschild, who as far back as 1882 saw that prospects were good for a wine industry, built at Rishon Le Zion the second largest wine cellar in the world, and in 1911 handed it over to the growers on condition that they organize a cooperative association for marketing the product. The golden Jaffa orange, made so popular in England since the Wembley Exhibition, is also marketed by the Jewish growers through a cooperative association. Tobacco, the production of which jumped from 265 tons to 1,845 tons inside of one year, until the inevitable slump convinced the planters of the folly of overproduction of a weed of inferior quality, is also marketed cooperatively.

Most of the Zionist postwar development is proceeding in the famous Esdraelon Plain, where 51 square miles have been purchased and much of it drained until, in the words of the former high commissioner for Palestine, the "former wilderness has been turned into a smiling countryside." The many springs of the River Kishon, which flows through the valley, and which have formed a series of mosquito-breeding swamps and marshes, are to be brought under control. The Anopheles-infested swamps of Nahalal and Nuris have been drained by the latest methods.

Thirty thousand five hundred meters of clay pipes, concrete canals, iron pipes, and dikes have been laid, often at places where traces were found of drainage works, canals, and embankments from early times, some before the conquest by the Romans. In this theater,

known scripturally as Armageddon, have been laid the foundations of a Jewish commonwealth with new social forms. Here the hereditary leasehold is universal because, with the exception of a tract of some 4,000 acres acquired by the American Zion Commonwealth around Afuleh, where a trade and industrial center is destined to arise, most of the land belongs to the Jewish national fund. Here the increased value will accrue to the fund, or to the Jewish people. Here mixed farming is followed, although plantations are not entirely neglected. Cows brought from Syria yield three or four thousand liters annually instead of six to eight hundred, the average yield of an Arab cow.

### WORK OF RECLAMATION

Reclamation, we are told, aims at changing natural conditions, and particularly the quality of the soil. It appears to be nowhere more necessary than in Palestine, where water must be diverted by drainage, swamps have to be dried up, dry districts irrigated and streams regulated, stones cleared, roads built, afforestation and manuring extensively started. Fertilization is doubly necessary after the rack and ruin of innumerable conquests and devastations in this theater where the unsystematic handling of the water resources has played havoc, where neglect has killed trees and destroyed terraces, where crude native cultivation has undermined the soil.

By far the most ambitious and significant piece of reclamation is the scheme to harness the Jordan River for the electrification and irrigation of Palestine, operations on which are beginning this month. I hope I may be permitted to include in this statement the following summary of the scheme, which appeared in the magazine The Near East and India for January 20, 1927:

Topographically Palestine is divided into three main parts, viz: (1) The coastal plain and Esdraelon Valleys; (2) the mountainous plateau; (3) the Jordan Valley. And to this difference in topography is due the diversity in climate and rainfall. The climate on the whole is semitropical, and although the rainfall is quite large—an average of about 26 inches—it has the specific feature that the rains are concentrated mainly during the four winter months. This distribution of rainfall makes irrigation a necessity of primary importance.

The intense winter rains coupled with the very rapid run-off caused by the absence of forests and by the steep slopes of valleys render the storage of the winter waters a matter of fundamental importance for hydroelectric development. The comprehensive scheme for utilizing the water resources of Palestine, by Mr. P. Rutenberg, deals very thoroughly with the matter of storage. By damming the rivers at the most suitable points several artificial lakes will be formed for the efficient utilization of available water in the future, and in the

first stage of the scheme the large natural reservoir of Lake Tiberias will be used for storage purposes.

### POWER DEVELOPMENT

The hydroelectric development of Palestine is connected with the Jordan—its largest river. At Banias this river is about 1,000 meters above sea level; at Lake Meron (Lake Huleh) it is 3 or 4 meters above sea level, and then, about 12 kilometers further along its course, it passes through Lake Tiberias at 200 meters below sea level.

On its way to the Dead Sea the Jordan receives the waters of several tributaries, the most important of which is the River Yarmuk, with a water catchment area of about 7,000 square kilometers.

The main advantage which the utilization of the River Jordan presents for the production of electric energy is the possibility of regulating the waters of this river in winter and summer by means of Lake Tiberias, which has a surface area of 170,000,000 square meters. The presence of this storage reservoir makes it possible to store all the excessive waters of the rainy winter months and to utilize the reserve during the arid summer months.

The first part of the projected development provides for the utilization of the 50-meter fall between Lake Tiberias and Jisr-el-Mujamieh. The topographical and geological conditions render the utilization of this fall most efficient and advantageous when divided into two steps with one power house near Jisr-el-Mujamieh and the other near Abadieh. The following works will be required for the first Jordon power house at Jisr-el-Mujamieh:

(*a*) A dam near Delhamieh retaining water to a depth of 6 meters.

(*b*) A dam of the Yarmuk waterfall retaining water to a depth of 8 meters and creating the intermediary Yarmuk reservoir, which, together with the reservoir formed by the Jordon, will have a total surface area of more than 1,000,000 square meters, and serve as night storage of the Yarmuk waters.

(c) A canal 1.9 kilometers long, conveying the Jordan waters into the above-named intermediary Yarmuk reservoir.

(*d*) A canal 400 meters long from the Yarmuk reservoir to the Jisr-el-Mujamieh pressure reservoir.

(*e*) A pressure reservoir, penstocks, and power house at Jisr-el-Mujamieh.

The capacity of the first Jordan power house will be 24,000 horsepower divided into three units of 8,000 horse power each, and a fourth unit of the same size will be provided as reserve. All the civil engineering works will be designed for full capacity, the generating sets being added gradually with the increase of consumption of energy.

The second hydroelectric power house on the Jordan will be erected at Abadieh when the requirements for power approach the maximum capacity of the first power house, and at this stage the Yarmuk waters will be diverted into Lake Tiberias. The second power house will be equipped with machinery of the same type and capacity as the first, and both power houses will then utilize all the waters of the Jordan and Yarmuk Rivers, the joint effluent of which will be drawn through Lake Tiberias and pass through the turbines of both power houses. The railway line from Haifa passes along the site of the projected works and makes the power houses particularly favorable for the transport and delivery of the machinery and requisite materials.

The third power house will be situated to the north of Lake Tiberias and will utilize the Jordan fall of 200 meters which occurs in the short distance between Lakes Meron and Tiberias.

The works described above will constitute the first stage of the project for the comprehensive electrification of Palestine. The total amount of power which can be made available by utilizing the water resources of the whole country is some hundreds of thousands of horsepower.

In order to transmit electric energy over long distances the use of high tension is essential. For this purpose a step-up transformer station will be erected at the Jordan power house, where the electric current will be transformed to a pressure of 66,000 volts. The overhead transmission lines of this pressure will run from here to the main substations at Haifa and Jaffa, where the pressure will be stepped down to to the values required for distribution in the towns and corresponding districts. The second and third power houses will be at a later date interconnected with the first one. The further development of the transmission scheme will go along the Jordan Valley, and will link on to the Jaffa substation from the East, thus giving the possibility of supply to any point from both sides.

The continuity of supply is secured by stand-by power stations at Haifa and Jaffa, which are equipped with Diesel oil engines and generate current at 6,300 volts. These two stations as well as the Tiberias power station have been erected first, in order to satisfy the existing requirements for electric energy.

The Jaffa power house was completed in 1923, with a capacity of 1,000 horsepower, and in 1924 an additional generating set of 250 horsepower was installed. The growing demand for power made a further extension necessary, and another set of 1,125 horsepower has now been added. The development of industry in Tel Aviv and Jaffa may be realized from the fact that, during 1923–24, 160 motors were connected, while in July, 1926, the number of motors was 510.

The Haifa power house, which was completed in 1925, is equipped with a plant of 1,200 horsepower and during the first year of opera-

tion has shown very satisfactory results. The distribution from these two power stations is effected at 6,300 volts by means of high-tension underground cables, terminating in transformer stations from which the town supply is derived.

Great attention is given to rural electrification. From the main substations the overhead transmission lines of 22,000 volts will run throughout the countryside. A number of secondary stations for giving local supply to all the settlements and villages are fed from these high-voltage lines. The importance of this for the country is obvious. Cheap and abundant power supply will greatly help the agricultural development, and at the same time stimulate the growth of different rural industries. A part of this work has already been done. Two high-tension lines were built in the Jaffa district, one from the Jaffa power house Surafend and Rishon-le-Zion, and the other from the same power house to Petach Tikvah, an important center for orange growing.

Such in bare outline is the great Rutenberg scheme, on which high hopes are justifiably built for the future developments of Palestine. The project, it will be noticed, will provide that small country, on the threshold of its industrial development, with a commodity—cheap and abundant power—for which Great Britain can almost be said to be still waiting the carrying into effect of the Government's electrification scheme. Not the least interesting feature of the enterprise is that it reverses the usual sequence of supply waiting on demand. The electrification of Palestine will have been possible only as the result of a happy combination—the technical skill of an expert engineer, the driving power of a convinced enthusiast, and the practical confidence of those who are financing the undertaking.

*Expenditures.*—The rising ratio in the Jewish expenditure on reclamation works can be judged from the fact that whereas in the 19 years preceeding the war the national fund spent only $37,500 on amelioration, within the past five years it spent $283,000, or 7.6 per cent of its total investment. In the past five years the national fund invested an average of $747,500 on land, or a total of $3,738,045. Of this investment 94 per cent has gone into the actual purchasing price of land, the fund concentrating on large continuous stretches in given districts. Only about 10 per cent of this has gone for the purchase of urban land, and but a modest share toward the extension of the area included in the older Jewish villages in order to accommodate individual new settlers with small means.

Colonization, as already stated, is financed by the Keren Hayesod, organized at the end of 1920. Since then the national fund has become a purely land-purchasing and improvement fund. Of the $12,191,585 invested by the Keren Hayesod between April, 1921, and

September, 1926, nearly 32 per cent was expended for agricultural colonization, 20 per cent for education, 12 per cent for immigration, 17 per cent for the promotion of urban settlements, loans for public works, and investments in industries. Health and sanitation claimed slightly more than 8 per cent of the outlay, subventions to religious institutions more than 6 per cent, and administration about 5 per cent.

This public Jewish expenditure does not include investments by settlers with means of their own, the large disbursements of the Palestine Jewish Colonization Association, founded and endowed by Baron Rothschild, the investment or expenditure of such bodies as the American Zion Commonwealth, or the private money that has gone to the creation of Tel Aviv, the growing Jewish town built originally as a suburb of Jaffa, on the sand dunes of its outskirts, and now become in the space of six years a modern township with 40,000 inhabitants. All told it is estimated that since the beginning of modern colonization about $50,000,000 of Jewish money has been invested in Palestine, the share of the Zionists organization being about $15,000,000, raised by the Keren Hayesod and the national fund.

The connection between America and Palestine can be best appreciated when it is remembered that fully 60 per cent of all money collected through voluntary contributions for the Zionist organization's funds has come from the Jews of the United States and Canada. In the United States collections for colonization, land purchasing, medical and sanitation funds have been integrated in the united Palestine appeal, obviating overlapping, inevitable perhaps in separate "drives."

### GOVERNMENT ASSISTANCE

What, may be asked, is the Administration of Palestine, or the British Government, doing to facilitate the establishment of the Jewish national home? The Government is not a colonization agency. Hence its expenditure on agriculture has been insignificant. As against the Zionist organization's budget for agricultural colonization of a million dollars this year, the Government budget is only $175,000, expended mostly on guidance, instruction, and experimentation; and also in behalf of the Arab peasant. But the Government is endeavoring to lighten the cultivator's burden, and among the important measures in this direction should be mentioned abolition of the Turkish tobacco monopoly, which has given impetus to tobacco raising by both the Arab and the Jew, and reduction of the traditional tithe on products from 12½ per cent to 10 per cent. In spite of this appreciable relief, a fixed and graduated land tax is still generally demanded. The Government also has just begun a cadastral

survey which it is thought will take 10 years to complete. One of the results of the survey, it is hoped, will be of benefit to the Jewish community. Under the mandate, State and waste lands are to be allotted for close Jewish settlement. Hitherto, the Government has not seen its way toward fulfilling this part of the obligation. All lands acquired by Jews, whether nationally through the Jewish national fund or privately, have been purchased at an average of $60 an acre for farm land. With the necessary improvements the cost mounts up to about $80 an acre. Most of the land has been bought from native owners whose lands either lay fallow or were primitively tilled by peasants who surrendered to the owner about a third of the crop as the priee of cultivation. Jewish land purchased is so conducted as to inflict no injury upon the native peasant. The squatter is either compensated or given another, often a better, tract of land. That no harm has come to the Arab, but on the contrary great benefit accrued to him, is testified by the latest report of the director of agriculture of the Palestine government, who declares:

"The Arab rural community has certainly benefited to a large extent from the increased immigration and industrial activity, which have created an abnormal demand for all classes of produce, with a resulting inflation of prices and the costs of living."

No native peasant owner, tenant, or squatter has lost or ever will lose his livelihood as a result of Jewish immigration and attendant reclamation.

The Government has been giving some attention to agricultural training. Two farm schools are being established, one for Arabs, one for Jews, both made possible by the endowment of a Jewish philanthropist who died in Shanghai, leaving in trust with the British Government a fund of some $600,000 to promote education in Palestine.

With the Palestine Government loan of $22,500,000, which the British Parliament recently authorized, an era of public building will soon be ushered in. Railroad construction, harbor development, and public works figure in the Government program. Part of the loan will go to repay past British loans advanced to Palestine by the Crown agents in the years following British occupation, when the Government balance sheet did not show a surplus of $2,500,000, as it did last year.

The Government has concentrated upon public security, without which Jewish reconstruction progress would have been impossible. The "most coveted spot in the Near East" is to-day the most peaceful. All but a force of some 250 British troops have been withdrawn. The country is garrisoned by a few squadrons of airplanes stationed on the other side of the Jordan. A trans-Jordan defense force locally raised keeps watch on the frontiers to the east and south.

Although no representative institutions exist as yet, due to the Arab leaders' refusal to cooperate with the Government, the municipal franchise law recently come into force will tend to end certain anomalies and disproportions. In Jerusalem, where Jews constitute 55 per cent of the population, there are only two Jewish members on the municipal council appointed by the Government. Elections can not help but redress this proportion. Equal suffrage is obviously inadvisable in so backward a civilization as that of the Arab, but it is the law in purely Jewish communities and districts. The Government has recognized the jurisdiction of the Rabbinical Council, the Supreme Moslem Council, and the Greek Orthodox Patriarchate. The Zionist organization enjoys special status, as representative of world-wide Jewry in relation to Palestine. It is recognized as the Jewish agency, a public body for the purpose of advising and cooperating with the administration of Palestine in such economic, social, and other matters as may effect the establishment of the Jewish national home and the interests of the Jewish population. It is under the auspices of the Zionist organization, acting as the Jewish agency, that the Jewish population has increased by 88 per cent. Toward the end of 1926 it formed 19 per cent of the total of 887,000. The net Jewish gain, largely through immigration since the British occupation, is about 100,000.

## AMERICAN IMPORTS

The back-to-the-land movement in Palestine is indebted to America for more than the money the Jewish citizens of the United States have poured out. The similarity in climatic conditions has sent many a promising young Palestinian Jew to California. They have brought from the University of California the lessons of California's mature experience and wonderful enterprise back to their country, tucked away in a corner of the Middle East. American vines have been grafted on the Palestine stock, with excellent results. An American-trained expert introduced scientific poultry raising. To-day nearly every Zionist settlement boasts an incubator of the Buckeye type. The local breed of fowl is being crossed successfully with purebred foreign stock. Leghorns, orpingtons, wyandottes, plymouth rocks, may be seen in every large farm yard. Steam plows and tractors of American make are in evidence on the ancient fields. More than 90 per cent of the automobiles used in Palestine come from America. American cigarette-making machinery is used almost exclusively.

But perhaps the most precious of America's contributions to Jewish rehabilitation of Palestine has been the guidance the Zionist organization has received from Dr. Elwood Mead. Attracted to

Palestine and its problems through the Palestinians who had come to him at the University of California, Doctor Mead, in the summer of 1923, made a pilgrimage to the Holy Land, leaving a number of valuable suggestions which the colonization authorities of the Zionist organization are at pains to put into practice. This conference will be pleased to know that he is about to head a commission to Palestine made up of American agricultural, horticultural, soi and marketing experts. Some of these gentlemen have been loaned by the United States Government for this expedition. The results of their research will be placed before a notable body of Jews who have promised their cooperation in the remaking of the Jewish agency, and hence in the rehabilitation task, as soon as these experts recommend *how* (but not whether) the task is to be proceeded with.

### PROGRESS OF HEBREW EDUCATION

In education as in colonization the Zionist organization shoulders the burden and responsibility in so far as the growing Jewish population is concerned. Education, which marches hand in hand with the resurrection of the Hebrew language, always has been regarded as one of the main factors in the Jewish return to Palestine. After 35 years of work in the educational field, spurred on by Zionist impulses, the Hebrew schools of Palestine have attained a reasonably high standard. Owing to work in the schools, the Hebrew language, reckoned among the classical but "dead" languages, has now become a feature in the life of the Jewish community. It is the only language recognized in Jewish public life, is used in private life by an ever-increasing part of the Jewish community, and has been given status as an official language by the side of English and Arabic.

The beginnings of Jewish education in Palestine, as in colonization, would have disheartened any but confirmed Zionists, confirmed in the conviction that without a solid cultural basis to support it and give it color and flavor the whole Jewish structure would crumble. The pioneers of education started without a common language of instruction, Hebrew then lacking modern technical terms, with no textbooks available in this medium, no experience with children of a new generation reared in a Jewish atmosphere, no knowledge of what local conditions were likely to develop. Experience has made good many of these deficiences. Hebrew is firmly rooted, and textbooks are in course of preparation on all subjects. In the wealth of ancient Hebrew lore, including the vast Talmudic sea, terms in the positive sciences have found their Hebrew equivalents. The latest contribution is a Hebrew textbook on the treatment of the eye, written by a physician of the Hadassah Medical Organization for the pupils of the Nurses' Training School in Jerusalem.

A school in Palestine is held to be as indispensable as bread. A village having as few as 10 children has its kindergarten. Every Zionist village has its elementary school of eight grades, where English is taught as a secondary language. There are high schools in the towns, and there are 4 normal schools, 3 in Jerusalem and 1 in Tel Aviv. The most important high school is at Tel Aviv. Opened in 1909 with 17 pupils, it has to-day an enrollment of 700. Out of the 500 graduates many will be found in universities and colleges all over the world, where the "Herzlia" diploma is accepted on an equality with the best of the world's secondary schools. Haifa, the future San Francisco of Palestine, possesses an excellent manual-training school and an institute of technology.

To cap this pyramid, there was inaugurated in 1925 the Hebrew University of Jerusalem, commanding one of the most impressive and inspiring views in the world. The University on Mount Scopus has institutes with adequately equipped laboratories for biochemistry and microbiology. The institutes of Jewish studies and of oriental studies are beginning to attract scholars of note. The building of the institute of mathematics and physics is supervised from Europe by the author of the theory of relativity. The institute for natural history will have attached to it the agricultural research institute which is part of the experimental station of the Palestine Zionist Executive. A staff of 17 professors, tutors, and research fellows is attached to the university, which has admitted so far only 85 matriculated and 31 attached graduate students.

To Jews belong the credit for introducing systematic agricultural education in Palestine. The first school of this kind was established in 1870 by the philanthropic Jewish organization, the Alliance Israelite. The school, situated in the Jaffa district, now has 156 students, of whom 5 are Moslem Arabs. As in the case of the "Herzlia" High School of Tel Aviv and the boarding school at Haifa, the agricultural school is attracting a number of boys and girls from outside whose parents are anxious for them to receive a Jewish education. The thirst for agricultural education can be judged from the fact that the girls' farm school at Nahalal with room for 60 pupils has received more than 1,000 applications.

Growth of the network of schools is shown by a glance at statistics. When, in 1916, the Zionist organization took over the schools which were then willing to come under Zionist tutelage, only 12 institutions with a total of about 1,000 pupils came within its orbit. In 1918, toward the end of the war, the Zionist organization was responsible for 41 schools, with an enrollment of 5,000. Enrollment this year is 18,593, an increase over the preceding year of 2,350 pupils. During this year 88 teachers were added and 83 new classes opened. The

cost of Jewish education is borne in the main by the Zionist organization, but the Jews of Palestine are doing their share through their local town councils, and tuition fees from parents in a position to pay. This local contribution at present amounts to about 40 per cent of a budget of more than $500,000.

For the education of the Arab child, the Government regards itself as responsible. More than 300 schools have been opened in towns and villages where prior to the British occupation, there were no schools at all, or only such schools as were maintained for the native child by different Christian denominations. However, of children among a population of more than 700,000 Arabs, Government schools provide for no more than 20,000, a number barely exceeding enrollment in the Zionist schools alone open to children of the Jews, who represent less than a quarter of the Moslem inhabitants. The Christian elementary and high schools are of course wide open to all, but they receive little or no support from the Government budget for education, which is just about equal to what the Zionist organization is expending in its sphere. Only this year the Government found it possible to make an appropriation for Jewish education amounting to about 10 per cent of the cost of running the Hebrew schools.

The difference in cost, as between the Zionistically administered Hebrew school and the Government school maintained from the country's revenue may serve as an index to the standard. In a word, the Zionist's aim in education as in agriculture is a European standard. The Government, because its revenue does not allow of greater expansion, accepts the primitive standard of the Arab in the one, and aims at no more than "native" education in the other. It is, however, preparing a generation of teachers in the men's training college and women's training college. For the rest, it invites the philanthropic, missionary, and other bodies interested in education to continue to supplement what in the nature of things the Government is able to provide. As against the 315 Government schools there are, including the Hebrew schools, 489 private and semiprivate institutions throughout Palestine.

The Jewish Labor Federation maintains a separate network of schools and classes for the adult worker, his offspring, and juveniles generally. Located mainly in the workers' agricultural settlements are 12 elementary schools with 400 pupils, and 26 kindergartens with 482 pupils. In the towns, Jerusalem, Haifa, and Tel Aviv, the labor organization conducts 39 night schools with an enrollment of 2,550, and 26 night schools are fully attended in the small holding settlements and communal agricultural groups. A library of 58,000 volumes circulates through 71 agricultural points and 11 town branches. The labor federation publishes appropriate Hebrew texts. Wandering dramatic troupes, musical quartets, and peripatetic lecturers complete labor's contribution to educational endeavor.

One word about the industrialization of Palestine. Although agriculture is acknowledged as the backbone of Jewish reclamation effort, industry claims its share of attention. A census taken in November, 1925, showed that there were 547 Jewish industrial establishments, large and small, in the land, giving employment to 7,000 persons, and representing an investment of 12,500,000. The heavy industries located in Haifa include a great cement plant, an up-to-date flour mill, and a modern soap and oil factory. A silicate brick or concrete block factory is located in Tel Aviv.

What has been done in Palestine by the Jews, especially in the last seven or eight years, and the methods pursued, justify the hope regarding the Jewish national home voiced by Sir Herbert Samuel, when he laid down his office in 1925 as Britain's first high commissioner for Palestine:

"So long as it is firmly founded, so long as it is solidly constructed, it will be capable of enlargement in the future."

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## *PROBLEMS OF STATE AND DISTRICT RECLAMATION*

*By Marshall Dana*
*Editor Journal, Portland, Oreg.*

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The back-to-the-city movement antedates the Christian religion. It has been proposed here as something new, something to be encouraged. In the Roman era its advocates urged the city's pleasures as preferable to the farmer's toil—the farseeing suggested life on the soil, not for food alone, but to prevent decadence of the race.

We know what happened to Rome.

We have got to have callouses in order to have conscience. Out of the soil comes all life, and from it, too, comes the greatest challenge to life. On the soil are the greatest lines of resistance. Strength comes by striving. Resolution, energy, mental, and spiritual endowment are products which the farm ships to town as well as grain and fruit. Pleasure would degrade leisure, easy paternalism produce the parasitic and undervitalized types; the resultant would be the retardation of civilization itself were it not for the unceasing flow of life backward and forward between the urban and suburban. It is fatal to break down lines of resistance. To struggle toward solution of the problem created by the interdependence of humanity and the soil is desirable; to complete the solution would be disastrous.

To urge overproduction as sufficient cause for farm abandonment, or even deferment of great policies of land and water use on the part

of districts, States, or the Government is economic fallacy. Overproduction is nearly always defective distribution. Not to regionalize production by artificial application of water to arid lands is to lay the extolled city life near by under tribute of long hauls, high freights, and repression of opportunity due to excessive cost of living. The balancing of population is dependent upon the balancing of agriculture and industry in the closest possible proximity.

In irrigation we have been attending the school of experience. It is a dear school. We would learn in no other. There is nothing wrong or impermanent about irrigation. The reasons are two, why we hear so much more about the failures of irrigation than of farming by aid of natural moisture. Irrigation represents the collective impact of individual problems. Its very nature demands group action. It has been subjected in the laboratory of years to extortion and exploitation. Irrigation has had to survive the dehumanizing influence of engineers and economists, the chaos of half-baked laws, and the denuding effects of high finance. Yet if we parallel irrigation with agriculture, aided by natural rainfall, we find it producing more to the acre and surviving depression better.

The individual can not, the community must, reclaim lands by irrigation. Hence the irrigation district. Hence the responsible relation to the districts on the part of the State or Federal Government. I do not speak as an authority in law or organization, but as an observer. I am forced to favor district organization with Government rather than State cooperation. The district is the proper operating unit. State law should foster the district's autonomy and establish its ability to hold settlers in responsible relationship to their obligations. Use of Government credit at low rates for long intervals, when genuine demand legitimately calls for irrigation and orderly marketing prospects are bright, appears as the ideal. In Oregon we are not decrying the irrigation district. We hold that it should have able directors and competent management. We are abandoning the guaranty of interest payments on bonds of approved projects, not only because advances of interest have proved costly to the State treasury, but because it was assumed erroneously that the State had guaranteed the bonds and should repay the bondholders where the districts failed to do so. We are also abandoning the law which directs that the last piece of individual property in a district should be held for the debt of the whole, and are endeavoring to substitute for it a provision that title is secure while individual assessments and taxes are met.

We have turned attention to systematic land settlement and selective colonization not as a State enterprise but at the expense of a fund subscribed by business men of Portland. This plan works. It refuses to countenance speculation, but secures listings with values

based upon productivity and the normal market. It issues no more illuminated literature nor goes on a settlement jag, but statements as to products, transportation, markets, and values are confined to the facts. The land-scttlement committee in chargc has no land to sell and keeps itself in a carefully independent position.

I do not wish a previous comment to carry thc infcrencc that I derogate engineers, economists, ncccssary laws, or sound financing. We have in thc laboratory of expericnce, often bittcr, dcveloped not only an irrigation science but a philosophy. Thc engineer once thought of irrigation as a ditch carrying water. Thc economist once measured results by carloads. Now, we see that engineering ends only when use of land is on a basis of established prosperity for individuals resident there. We see that carloads are of less consequence than human products.

In other words, no matter what the avenue of approach, the human equation is the ultimate consideration in irrigation. The project may be large if the largest welfare of the individual is permitted. We urge one-family farms, those products that feed the family first, the orderly marketing of surplus, and the creation of happy living conditions. If Proteus Steinmetz's dream of a four-hour day is to be realized by anyone, give it to the farmer. Give him and his family moving picturcs and a motor car that cheerfully travels from farm to town as well as from town to sccnery. Give him breathing space. Thc farmer is as entitled to parks, though natural, as thc city dweller. Fun for the farmer is a good cause and he is entitled to whatever benefit he may have from modern machinery, economically servcd electric current, and smooth transportation.

This is not a time for cphemeral economy to discourage life near the land. Balance, health, industry, character, and stability call for application of modern invention and device to a better lifc on the soil. Fruitful fields should contribute to fruitful lives. The morc important yield of the field than grain and fruit is people.

I am a delegate to this conference as a trustee of thc Columbia Basin Irrigation League, which seeks the rcclamation of approximately 2,000,000 acres of land in thc Pacific Northwest. It is a gigantic project, with every challenge to imagination and constructive ambition. The soil is dcep; thc water supply abundant; thc climatic conditions favorable; the transportation by rail, highway, and water is alrcady established; the possibility of human control of the conditions of production is great; the opportunity to provide homes for many thousands of people is real; and the cconomic validity of the project is indorsed by the estimate that its potential production would be not less than $200,000,000 a year. Moreovcr, the success of thc Columbia Basin project will lend to the success of other and smaller projects of irrigation in the Pacific Northwest and

go far toward establishing, in general, that interchange of commerce, social life, traffic, and industry that are essential to a truly balanced population.

The hope of success for the Columbia Basin project is based upon confident expectation of governmental recognition and appropriation. Secretary Work, the general chairman of this conference, has committed himself to the statement that it will come and that it is only a question of time. The friendly interest of Doctor Mead and his cooperation in every essential activity have been distinctly encouraging. The project is distinctively one that refutes any suggestion that reclamation is small or to be belittled, but that it contains every incentive to engage the energy and devotion of our brainiest and most farseeing men.

Adjournment.

## *Thursday Afternoon, April 14, 1927*

### *Round Table Discussion*

*Elwood Mead, Presiding*

The session was called to order at 2 o'clock by the chairman.

Mr. DANA. From the statements that have been made I have gained a partial idea of the costs of reclamation in the various localities, namely, Hawaii, $300; Japan, $500; Mexico, $150 or more; Palestine, about $200; California, $50 to $250; and Pacific Northwest, $30 to $200. Peru and Australia I did not get, and should like to ask for more information on that subject.

Mr. CATTANACH. We would reckon, in some cases, $150 to $200 as a very reasonable figure for reclamation, but for intensified agriculture it will go higher—about $300 to $400 an acre. It depends entirely on the use to which the land is going to be put. It is a varying quantity according to the nature of the land, the crops, etc., but the crops generally are of greater value where the land is more expensive to bring under irrigation and cultivation.

Professor HUNT. What does the term "reclamation" mean? Does it mean how much does it cost to develop an irrigation enterprise, or the cost of building the enterprise, cost of leveling the land, grading, and so on to the point where a man can go on the land? In Australia and some other countries, of course, they go much further than we do and build houses, etc., before they consider that they have completed their reclamation project.

Doctor MEAD. I should like to ask Señor Belon to tell us what you have to pay for land in Peru. Is your land private land that you buy or is it land that is already owned by the Government?

Señor BELON. Some land is public. The private land we buy at the rate of $10 an acre.

Doctor MEAD. What do you sell it for?

Señor BELON. We charge 75 Peruvian pounds or $120 per acre. This covers the canals and everything; we sell land and water together. Repayment is in 25 years, without interest.

Doctor MEAD. Do you charge for the water?

Señor BELON. Only for conservation.

Doctor MEAD. Do you base your charge on the quantity of water furnished? If you give 1 acre-foot or 2 acre-feet, do you make a different charge?

Señor BELON. In a new project we make a distribution this way: We give 5 liters per second per hectare, but in an older section we make a rotation of half a liter per second per hectare.

Doctor. MEAD. A reference was made in the discussion of Palestine to the fact that I had been there. I should like to submit a few observations which might prove interesting, in addition to those brought out in Mr. Agronsky's report.

The portion of the territory that is to be reclaimed, where the greatest achievements in agriculture are to be made in the future, is on the coastal plain of the Mediterranean. There the red soil is very much like some of the red soils of southern California. The climate is very much like the coastal climate of southern California, with the exception that it is practically frostless. There does not seem to be any reason, if water can be provided, why the people of that region should not create a rural life equal to that of southern California. Baron de Rothschild has started in Petach Tikvah an orchard that is based on California practice, irrigated from a fine cement reservoir—an orchard where the trees are planted widely apart as in California, a 75-acre orange grove made up largely of Valencias and Navals that would duplicate some of the best orchards around Whittier. The prevailing orange is the Jaffa; the trees are planted so close together that it is impossible to cultivate them. But the most interesting part of the Palestinian development and the one that is destined to have the most remarkable future is around the harbor of Haifa. Emperor Wilhelm, of Germany, who was very much interested in Palestine prior to the World War, manifested a particular interest in Haifa. He not only laid out a modern town, but he planted an agricultural colony there. It was a success, and shows what intelligence and experience will do. Unfortunately for Palestine and, I think, unfortunately for the farmers themselves, they were dispossessed of their farms. A considerable part of the land has been taken for an experimental farm and for timber plantations.

The thing that impressed me the most around Palestine was the denuded character of the Judean hills. When the Romans were driven out and the eastern influences came in they had no interest in the things that go to make up a civilized life. The best use of a school was to close it and of a tree to cut it down. All cultivation stopped. As Mr. Agronsky said, in his paper, the terraces that lined the Judean hills have fallen down and been exposed to erosion, and the greater part of the soil has washed away.

Returning now to Haifa. Surrounding that great crescent there is a body of gently sloping and very fertile land, with the tributaries of the Kishon River flowing through the valley. It is probable that the flow of the oil wells from the interior will come down to the coast through this valley, and Haifa will be a great manufacturing center. I believe that Haifa is destined to become one of the great cities of the Mediterranean. Through the benevolence of a wealthy man of New York there was established a direct steamship line to Haifa, but it was premature. It was taken off for the time being, but it will come back again.

The difficulty in developing this country is in acquiring the land, most of which is owned by the Syrians. It is being done by purchase. When it comes to the purchase of land, the first difficulty encountered is that there are no surveys, no corner stones. Great Britain is now making a survey that will end that condition. Another great handicap is that time is no object. I was in a hotel at Nazareth, where a group of people were bargaining for a tract of land which the Jews wanted. They had been at it 30 days, and might be at it another 30. The man who desired to purchase the land was squatting on the floor, in a bare room, with his back up against the wall. Lined around the walls of the apartment were 30 or 40 people, who had discussed the price of the land and everything else they could think of. Their idea evidently was that "we are going to sell it, but time is no object; this is better than a movie; here is a free entertainment."

At the time I was there it seemed as though there was a wonderful opportunity for creating one of the most beautiful tourist resorts along the Mediterranean at Mount Carmel, about 2,000 feet above the sea, from the top of which you can see the Mediterranean from three directions. When I got back to New York my attention was called to the fact that a corporation had been formed with a million dollars capital to build a hotel on the top of Mount Carmel.

I was at Tel Aviv near the old city of Jaffa. There the Jews were given permission to take the sand dunes north of the city and do what they could with them. They have pulled them down, leveled them out, and built a city. I was there in 1923. They said it was a city of 18,000 people at that time. We traveled along a street that had a central park, broad streets, cement paved all the way across with parking down the center. They said to me, "Two years ago we were driving the stakes on this street," and yet it was a solidly built business street 2 miles long. When I was there in 1923 there was a growth of 22,000 population in three and one-half years. But there is no difficulty about re-creating and building up business; the problem is to establish agriculture. The Jewish people have been separated from the land so long that it is going to be a selective process to develop agricultural pursuits.

At Nahalal I saw one thing that impressed me very much, and that was a farm school for girls. This institution trained them to be real wives for farmers; taught them to milk, to cook, to make butter, and perform all farm duties. With the kind of training they were getting I do not believe that the movies will have much attraction for them when they get homes of their own.

I saw in the valley of the Kishon a succession of swamps and low lands very much like the delta country around Stockton in California. I speak of them because Mr. Agronsky referred to them. There never can be any satisfactory agriculture until it is possible to drain the swamps, open up the springs, and put an end to the mosquito pest in the infected areas. There were sections in this region which had been drained. I noticed one large drainage enterprise where the people had finally gotten the streams opened up and the water run off. But much still remains to be done to clear the country entirely of these malaria and mosquito pools.

Mr. AGRONSKY. I should like to ask Mr. Teague what the average yield of oranges is in California.

Mr. TEAGUE. About 250 boxes of fruit to the acre. A good commercial orchard ought to yield about 300 to 400 boxes.

Mr. CATTANACH. How many trees to the acre?

Mr. TEAGUE. About 75 to 85.

Mr. AGRONSKY. What is the cost of planting?

Mr. TEAGUE. About $400 to $500 per acre. This includes everything.

Mr. AGRONSKY. Any nonresident owners?

Mr. TEAGUE. Yes; quite a few, but as a rule the owners are the growers.

Mr. AGRONSKY. What are the average returns?

Mr. TEAGUE. Well, anywhere from nothing to over $1,000 per acre.

Mr. AGRONSKY. What is the average acreage?

Mr. TEAGUE. Ten acres under ordinary conditions, among 1,200 growers.

Mr. CATTANACH. I should like to thank the members of the conference for the frankness of opinion expressed and the much new information presented. I hope we can have a future conference in Australia, where I come from.

Professor KRAUSS. In behalf of Hawaii I should like to express our thanks.

(The following papers were presented to the conference in the absence of the writers:)

# RICE INCREASE PROGRAM IN CHOSEN

*By T. Ikeda*
*Chief Engineer for Water Supply, Korea*

Chosen has been an agricultural country from of old, and her national foundation has ever rested on agriculture. The backbone of her agricultural system is rice.

The climate and soil of Chosen are well suited to the cultivation of rice, and the major part of her population engages in agricultural pursuits, so the trails marked by the undaunted efforts of the authorities in the encouragement of this industry in the past are plainly visible.

At the very outset the new Government of Chosen instituted investigations into the various industries of promise, with a view of ascertaining which might be relied upon to bring the most certain yield and benefit the masses in the highest degree, with the result that rice was plainly pointed out as the premier one. Keeping this in view, the Government from the time of annexation, has worked for the transformation and development of the yield of rice. Fortunately its endeavors have been so fruitful that the supplying of all domestic needs is met on the one hand, and on the other a large volume of rice is yearly available for export, ranging in amount from 24,800,000 to 29,760,000 bushels, having a total value of more than 200,000,000 yen. This means an average increase of over 10,000,000 yen a year in trade as compared with years previous to annexation, and this, of course, directly or indirectly affects the majority of the 20,000,000 inhabitants of the country. This is a concrete form of the blessing the rice industry has been to the country in the past, and to-day no one agricultural product excels rice in its enrichment of the masses of the people.

Happily there is still plenty of room in Chosen to allow of increase in the yield of rice, and a few years ago the general government drew up a program for accelerating its development. This program was first drawn up in the year 1920, and was designed to improve existing fields and the system in use over an area of 1,029,000 acres and so render them capable of an increased yield of 49,600,000 bushels, of which half could be exported.

In the space of six years—that is, by the end of the year 1925—approximately 220,500 acres were improved, but from the experience thus gained many deficiencies in the plan were brought to light. To overcome these a revision of the plan was made, the gist of which is as follows:

*Outline of the program.*—The revised program to be carried out in the 12 years beginning with 1926 covers 850,750 acres and concerns itself with the improvement of those lands and the methods of their cultivation. Its aim is to secure an increase in the yield of rice by 40,672,000 bushels per annum, and the amount needed to effect this improvement is estimated at 303,250,000 yen, including Government subsidies to a total of 65,070,000 yen. In addition to these subsidies the Government has appropriated 8,440,000 yen for probable expenditure in connection with the supervising and encouragement of the work of improving these lands, 3,500,000 yen to secure improvement in farming methods, and 40,000,000 yen for the special purpose of accommodating the farming population, with loans at a low rate of interest to enable them to purchase fertilizers and to make improvement in their methods.

The principal items of the plan are as follows:

1. *A basic investigation with reference to improvement of lands under cultivation and their extension.*—The general government has made careful investigation of each field in succession, with the object of making known to the public the area of land capable of improvement, its location, the best methods for its utilization, the estimated expenditure on the undertaking, its receipts and disbursements, and various other matters according to the water facilities, in order that the information may serve as a guiding principle for those undertaking the work of improvement and extension. More than one-half of the plan has already been completed.

2. *Grant of subsidies.*—The subsidies granted to effect improvement of the lands will be made at the following rates of the cost of the work to be done: (1) Improvement of irrigation system for paddy fields, 20 per cent; (2) conversion of lands into paddy fields, 25 per cent; (3) reclamation of lands for conversion into paddy fields, 30 per cent.

3. *Supervision and direction with reference to land improvement undertakings.*—A section was created in the general government with a view to exercising adequate supervision of such work and to enforce the execution of the proposed undertakings.

4. *Farming methods and selection of seeds and fertilizers.*—The government sends experts to districts where such are needed to promote and supervise the selection of seed, to encourage the use of improved fertilizers and their proper application, to urge the drying of unhulled rice and its careful grading, etc.

5. *Accommodation with funds at low rate of interest.*—The comparatively high rate of interest ruling in Chosen greatly affects the rise and fall of land-improvement undertakings, especially those needing long-term investments, so the government has appropriated

funds to allow of its granting loans at a low rate of interest to those undertaking such enterprises.

6. *Effect of undertaking.*—When the program is fully executed the production of rice will be increased to a minimum of 40,672,000 bushels worth 246,000,000 yen, and of this at least 24,800,000 bushels worth 150,000,000 yen will be available for increasing the trade of the country.

## *RECLAMATION AND IRRIGATION IN SIAM*[1]

*By Chao Phya Baladele*
*Minister of Lands and Agriculture of Siam*

As this is the first report of its kind to be issued by the royal irrigation department, a brief note is necessary explanatory of events which led to the establishment, or, to be more accurate, the reestablishment of the Royal Irrigation Department of Siam as at present constituted.

The problem of stabilizing, increasing, and improving the rice production of Siam has been one of primary importance for many years past. The more Siam has advanced toward one of the leading places as a rice-producing country the more acute has become the necessity for finding a solution to the problem.

The average rainfall of the central plain of Siam, which comprises the whole of the deltaic tracts served by the Menam Chao Phya, the Menam Nakorn Nayok, Menam Prachin, and Menam Bang Pakong, as well as the lower valleys of the Menam Prasak, the Menam Meklong, and the Menam Bhejaburi, and in which area are situated the six inner circles which are responsible for most of the rice produced for export, is only 1,052 millimeters (41.43 inches), which compares very unfavorably with the rainfall of its most adjacent neighbors and competitors in the world's rice markets, viz, Burma with over 4,000 millimeters (157.5 inches), and the plains of Indo-China, with an estimated 1,800 millimeters (70.9 inches). The average rainfall during the 10 years from 1906 to 1915 was in Annam 1,850 millimeters (72.85 inches), Cochin China 1,520 millimeters (59.85 inches), and Cambodia 1,550 millimeters (61.02 inches). In the portion of Burma south of the Salween River immediately west of the Central Plain of Siam there is a normal rainfall for the year of 4,658.1 millimeters (183 inches) in 141.8 days and a normal for the rice-growing period, June to November, of 4,032.7 millimeters (158.74 inches) in 116.1 rainy days.

[1] Paper furnished by Alexander Hume Ford, director of the Pan Pacific Union.

The actual depth of water required to mature a rice crop, based on records obtained from countries (India, Burma, Egypt, and Java), where irrigation methods have been brought to a high degree of efficieney, may be taken as 6 feet or 1,829 millimeters, and this quantity is required during the rice growing season, say from June 1 to the end of November. Now the average rainfall in the Central Plain for this period is 1,052 millimeters (41.43 inches), so that the average rainfall falls short of requirements by as much as 777 millimeters (30.57 inches). In years of good rainfall the deficiency is made up by the rivers overflowing their banks, but in years of scanty rainfall, or rainfall coming at the wrong time, it is more than probable that the rivers unassisted will not rise to such a height as will provide for satisfactory inundation of the crops within their spheres of influence; and when these conditions prevail there is generally damage over wide areas, both in the way of total failure and attenuated outturn of grain.

## EARLY IRRIGATION

The first serious attempt in the Central Plain of Siam at anything approaching an irrigation scheme was made by the Siam Canals, Lands & Irrigation Co., which company some 40 years ago obtained from His Majesty the late King Rama V a concession which has since been known as the Rangsit concession. This company dug a series of canals in the concession area, and constructed certain locks and sluices. The object of the works, however, was merely to conserve whatever water came into the area by natural means in time of scarcity of rainfall and low river supply, rather than to provide irrigation works in the true sense, and they could do nothing to insure that the low river supply could be utilized for the benefit of the growing crops, instead of running uselessly to waste in the sea. Briefly, the scope of these works did not go far enough, and the canals dug by the company were simply inundation canals serving the purpose of intercommunication rather than any other purpose, and after a few years it was found that owing to the rapid silting portions of the land opened up by the system became once more cut off and inaccessible. The Rangsit system of canals was completed in the year 2439 B. E. (1896) and the concession lapsed to the Government in the year 2458 B. E. (1915), when the works were taken over by the Royal Irrigation Department.

It was hoped that irrigation schemes carried out on the lines adopted in the Rangsit concession would meet all the needs of the country in stabilizing rice production and in providing that exportable surplus of rice which the growing economic conditions demanded in ever-increasing quantity, and that this system might in course of time be extended to cover the whole of the great Central Plain. The

inherent defects of the scheme, however, soon made themselves so evident that it was realized that something very much more comprehensive was required if Siam was to maintain the position she had gained as one of the world's food producers. Though the Rangsit scheme brought under cultivation about 350,000 acres of first-rate rice land, the actual matured area was never more than 40 per cent of this total and the high hopes entertained of an increase in productivity as a whole was not equal to expectation.

### EMPLOYMENT OF IRRIGATION EXPERTS

In November, 2442 B. E. (1899), Chao Phya Devesr, at that time Minister of Agriculture, after a tour of inspection through the Rangsit area, submitted a report to His Majesty the late King (Rama V), proposing the appointment of a hydraulic engineer as an adviser to the Ministry of Agriculture. His Majesty the late King Rama V was graciously pleased to approve the proposal, and accordingly negotiations were opened with the Government of the Netherlands East Indies for the loan of the services of an irrigation expert for the purpose of investigating the irrigation possibilities of the central plain. As a result, the services of Mr. J. Homan van der Heide were placed at the disposal of His Majesty's Government. Mr. van der Heide arrived in Bangkok in June, 2445 B. E. (1902), and after spending eight months investigating the possibilities of irrigation he submitted a report in January, 2445 B. E. (1903). The royal irrigation department (Krom Klong) was then constituted in 2446 B. E. (1904) and Mr. van der Heide was appointed the first director general.

Financial exigencies, however, prevented the realization of any of the main projects put forward by Mr. van der Heide, but at the same time the fine system of locks and sluices, projected by him to conserve water in the southern portion of the central plain, was constructed on both east and west banks of the Menam Chao Phya, and these works, while they fell short of the true requirements of irrigation works, added materially to the prosperity of the country by enabling inundation water to be retained until such time as the rice crop had come to full maturity, but like the Rangsit works they could do nothing to assist in drawing in supplies when the rivers themselves did not rise to a sufficient height to inundate.

The old royal irrigation department remained in existence long enough to bring these minor works to a fair measure of completion, when, as funds were not forthcoming to make a start with the major works which had in the meantime been worked out in detail by Mr. van der Heide and staff, the Government decided to postpone the construction of irrigation works indefinitely. At the beginning of the year 2452 B. E. (1909) Mr. J. Homan van der Heide left Siam to

take up a leading position in the irrigation service of his own Government. On the retirement of Mr. van der Heide, Mr. J. van Tuburgen, deputy director, became acting director general until August, 2452 B. E. (1909), when Phya Sawasdi Voravithi was appointed director general, and a few years later, on the 3d of April, 2455 B. E. (1912), the royal irrigation department ceased to exist for the time being.

Climatic conditions, following on the decision of the Government in the year 2452 B. E. (1909) to postpone indefinitely the construction of irrigation works, soon made it evident that this question could not be shelved for very long, and two unfavorable years in succession at the beginning of the reign of His Majesty the late King Rama VI, when the supply in the rivers was particular low, again forced the question of irrigation to the front.

### FACT-FINDING COMMISSION APPOINTED

His late Majesty was then graciously pleased to order that measures should be again considered whereby such recurrent checks upon the advancement of the Kingdom and upon the well-being and prosperity of His Majesty's subjects might best be avoided in the future. In consequence of these instructions a commission was formed under the guidance of His Royal Highness the late Prince Rabi, then Minister of Lands and Agriculture. The commission reported that to concentrate upon rice production and to supplement by scientific irrigation the natural but capricious supply of water obtained from rainfall and river inundation was the best means to secure agricultural results necessary for the regular provision of that public and private wealth without which the welfare of the state and its inhabitants could not be assured. On receiving this report His late Majesty was pleased to instruct the Minister of Lands and Agriculture to prepare irrigation schemes to meet the requirements of the case.

Before starting on another venture for the provision of works of irrigation and drainage it was decided to obtain the best advice possible, and for this purpose the Government of India was approached, and Mr. W. A. Graham, adviser to the Ministry of Agriculture, in 2456 B. E. (1913), was deputed to proceed to India to negotiate personally for the loan of the services of an irrigation expert, to come to Siam, and to again examine the possibilities of providing irrigation facilities in the great central plain. As a result of these negotiations the Government of India selected Mr. (now Sir Thomas) Ward, C. I. E., M. V. O., M. I. C. E., one of the foremost of living irrigation experts, for the purpose of carrying out the investigations required by the Government of Siam. Sir Thomas, accompanied by a specially selected staff drawn from the Indian irrigation service,

arrived in Siam in September, 2456, and immediately commenced his investigations.

Sir Thomas Ward's work was greatly facilitated by the preliminary work which had been accomplished and placed on record by the old irrigation department under the guidance and direction of Mr. van der Heide, and within the period of 18 months he had completed the task allotted to him, and had drawn up a complete project, or rather a series of projects, for the scientific irrigation of practically the whole of the central plain, as well as for some outlying districts which were really outside the scope of his commission. His late Majesty was kept informed of the progress and results of Sir Thomas Ward's investigation by reports submitted from time to time by the Ministry of Lands and Agriculture, and on the successful completion of his task Sir Thomas returned to India in February, 2457 B. E.

While Sir Thomas was still in Siam, His Majesty was pleased to order the resuscitation of the department of irrigation under the new designation "Krom Thod Nam," and this department was placed under the direction of Mr. R. C. R. Wilson, an engineer of large experience, who had accompanied Sir Thomas from India as chief assistant.

The results of Sir Thomas Ward's investigations for the development of irrigation in Siam are published in four volumes, which were issued by the royal irrigation department in the year 2458 B. E. entitled "Project Estimate for Works of Irrigation, Drainage, and Navigation to Develop the Plain of Central Siam." These volumes were accompanied by Sir Thomas Ward's report, prefaced by a valuable minute by His Royal Highness the late Prince Rabi. In this minute His Royal Highness put the case for irrigation in Siam very briefly and clearly when he stated that "the object the Government had in view in introducing irrigation works was to enable the farmers of Siam to maintain against the increasing competition of neighboring rice-growing states fostered by energetic governments the position hitherto held by Siam in the rice markets of the world."

### THE PROPOSED IRRIGATION DEVELOPMENT

After exhaustive investigation Sir Thomas Ward arrived at the same conclusion as Mr. Homan van der Heide had done some years before, namely,that the possibilities of scientific irrigation in Siam were very good, and that great benefits might be expected therefrom. He even went so far as to say that the Government might envisage a program, the cost of which would not be less than 100,000,000 ticals; as a matter of fact, under present-day conditions,

12 years after Sir Thomas Ward wrote his report, a sum of 150,000,000 ticals at least would be required to carry out the full program. This program, of course, included the works necessary to obtain complete control of the Menam Chao Phya, as unless the supplies of this fine river are harnessed and utilized as required to meet the needs of the country the immense rice-growing tracts of the central plain can never be fully developed or even such lands as are already cultivated can never be made to yield, year by year, the outturn of grain which they otherwise might. While thoroughly realizing, however, that the construction of a great barrage somewhere near Jainadh would eventually become necessary, Sir Thomas Ward did not at that time consider that the large expenditure which would be necessary to cover the cost of this work, and the works dependent and connected with it, would be justified. Sir Thomas was of opinion that the population of the country was insufficient to work the large areas of land that would be brought under command, either with profit to themselves or to the state, and, further, that the farmers themselves would take time before they would adapt themselves to the new condition of working which scientific irrigation demands, if the best results are to be obtained for the state and for the farmers themselves.

Experience already gained in the working of the irrigation system just completed has shown that Sir Thomas was entirely right, and that irrigation developments in this country should be gradual and sure, but should in no case run ahead of demand. It will be many years still before the barrage works at Jainadh can even be contemplated; in the meantime, however, all individual schemes which are carried out should be constructed with a view of one day being linked up into one comprehensive scheme protecting the whole of the central plain, and mainly dependent on the waters of the Menam Chao Phya for its supply.

For immediate practical purposes Sir Thomas Ward proposed the execution of a comparatively modest program, the results of which would be: (1) To extend and stabilize the crops of the lands lying to the east and west of the Sulphan River, as far south as Klong Song Bhinong; (2) to insure and increase the rice crop in the Petchaburi changwad east of the Petchaburi River, the system to be ultimately extended to the west side also; (3) to stabilize and incidently to increase the rice crop of the area already opened up by the Rangsit navigation canals and of the districts surrounding that area; (4) to irrigate the plain in the neighbo hood of Nakorn Lampang in Mondhol Bhayab, thereby greatly increasing as well as stabilizing the rice crop of that area; and (5) by improving the present system of navigation and drainage canals in the districts east and west of the Menam Chao Phya to improve and secure the rice crop of that great area.

The cost of these five projects was estimated by Sir Thomas Ward at 22,750,000 ticals divided as follows:

| | Ticals |
|---|---|
| (1) Supan River project | 7, 500, 000 |
| (2) Petchaburi East Canal | 1, 500, 000 |
| (3) Prasak South Canal | 11, 500, 000 |
| (4) Hill irrigation at Lampang Mondhol Bhayab | 1, 000, 000 |
| (5) Irrigation and drainage works in the flat plain from Ayuthia to the sea on both banks of the Menam | 1, 250, 000 |
| | 22, 750, 000 |

Of the foregoing projects Sir Thomas Ward strongly advised that the one which he named the Subhan lesser inundation scheme (No. 1 above), to distinguish it from a more extensive Subhan scheme, should be undertaken first, and this was also the opinion of the first director general, Mr. Wilson. The reasons why these recommendations were made were that the scheme was not so expensive as the Prasak South Canal scheme and that in the large area it was proposed to bring under command, in which no attempts at irrigation had ever been made, the department would have a free hand in the design and alignment of channels, and that as there was a considerable area of waste state-owned land within the scope of the Subhan scheme the land could be divided up into allotments in accordance with modern irrigation practice. Also it was advanced that the Subhan project would offer to the country at large a better example of what an irrigation project should be than could be expected from the Prasak scheme, where the work had to be designed to fit in with existing canals and vested interests and where the aim is improvement rather than new and original work.

The Government, however, decided otherwise and selected the Prasak South Canal, No. 3 on the list of projects detailed above, on which work should be first undertaken.

The Government took the above course probably because it was considered inadvisable to disturb existing arrangements of landlord and tenant in the Rangsit area and elsewhere, which the opening up of big areas of land in Subhan, free to all, must have done. But this is a contingency that, sooner or later, will have to be faced, because, as any economist knows, it is greatly to the interest of the Government to convert as many people as possible from the condition of tenant to that of owner of the soil; and given a chance to acquire private ownership, the tenant class will certainly desert the landlords, who will be compelled to turn to agricultural machinery or hired foreign labor in order to keep their lands in cultivation.

Sir Thomas Ward's estimate of 22,750,000 ticals was based entirely on rates at which work could be carried out prior to the world-wide conflagration which broke out in August, 1914 (2457 B. E.). Present

conditions, owing to the World War and its disturbed aftermath, have been altered beyond all comparison with those which prevailed prior to this event, and at least 35 per cent must be added to Sir Thomas Ward's estimate to arrive at even an approximate idea as to what the works projected by him in 1914 would cost now; that is, his estimate of 22,750,000 ticals would have to be increased to 30,712,500 ticals for the projects included in the statement above.

Sir Thomas, in addition to the recommendations made as described above, also recommended that the 1,000,000 ticals included for hill irrigation in Mondhol Bhayab should be provided without delay. Although irrigation in the northern Province was outside the original scope of his inquiries, he knew from his experience as an irrigation engineer that a comparatively small sum spent in the north would afford a handsome and immediate direct return to the Government on the money expended. The people in the north have practiced irrigation methods for centuries; they thoroughly appreciate the benefits that they can derive from a scientific irrigation scheme and are quite prepared to pay for the same. Cultivators in the central plain, however, are not sure of the benefits to be derived, as they have never had experience of anything approaching a proper system of water distribution; the necessary knowledge will come to them only gradually, and patience will have to be exercised meanwhile.

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### *Statement by Hon. Hubert Work*
*Secretary of the Interior*

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One of the important gains of the reclamation section of the conference has been the personal contact of men holding responsible positions in the administration of irrigation laws in nearly all of the countries bordering on the Pacific. These men know what their respective countries are endeavoring to do; they know the strength and weakness of their methods and the obstacles which have to be overcome in the conquest of aridity. I speak of irrigation because this is the form of reclamation made prominent at this conference.

The first two days were devoted to a discussion of the aims and methods of the different countries. Part of this discussion was the presentation of formal papers by administrative authorities, but the more valuable feature was the informal round-table discussion which followed. There was general agreement that the engineering methods of reclamation by irrigation are now as well standardized as those of railroad building. Little attention was given to this, although there was surprise expressed at the engineering achievements in Federal reclamation in the United States which were presented in statistical tables, diagrams, and photographs.

The complex question of what authority should control the distribution of streams and the nature of the rights to be recognized therein had serious attention. It became apparent that the United States can learn much from what other countries are doing. The contrast between the continuous and costly litigation in California, which has recognized the doctrine of riparian rights, and the entire absence of water-right litigation in Australia, where this doctrine has been definitely abrogated and where there is State control of public water supplies and State administration of streams placed on a definite and working basis, suggests the need of further action on this matter in the United States. It is further shown by the necessity for administrative control of streams throughout their length, where they pass through several States, as does the Colorado. A resolution of the conference affirms its strong conviction that control of all water in rivers, streams, springs, lakes, marshes, and natural receptacles and water sources should vest in the Government.

This resolution was adopted unanimously, both in the reclamation section and by the conference as a whole. It discards the doctrine of riparian rights in favor of public control by the Government, State or National, of all water supplies.

All of the countries represented at the conference are finding it necessary to help settlers change raw lands into farms, and other countries are doing more in this direction than the United States. They give greater assistance in the preparation of the land for irrigation, in providing advances to help settlers equip their farms, and in giving advice and direction as to methods of cultivation, crops to be grown, and cooperation in producing and marketing. This matter is of such importance in the United States as to justify the wide publication of the resolution which was adopted regarding this feature:

*Resolved*, That the Pan Pacific Conference on Education, Rehabilitation, Reclamation, and Recreation, in plenary session assembled, upon recommendation of the reclamation section, affirms the necessity of recognizing that the fundamental requirements of land settlement should be those that will assure the efficient and bona fide settler security of tenure, including extended terms of payment for the land, sympathetic assistance by means of advances of money for the preparation and establishment of the farm in its early stages, the providing, as far as practical, of social conveniences and means for recreation, and the encouragement in every way of individual effort and initiative.

The papers and discussions at this conference of the different phases of reclamation by irrigation should be read and studied by the people of the western third of the United States. They show that, while there is considerable variation in present economic methods, there is a remarkable agreement among those who hold responsible positions as to the principles and policies which should be adopted.

The members of the reclamation section believe there should be a second conference at an early date. This one served to clear the ground for a more thorough study of certain legal and economic features of reclamation. The next one would have the benefit of the personal contacts formed at this one, of a better knowledge of what the different countries are seeking to do, so that the discussions of the conference could be centered in advance on vital issues. The information brought by the different countries on legal, economic, and social questions could be more complete and hence much more valuable to all those interested in the creation of a high type of rural civilization in the widely scattered and important countries which would participate.

[For resolutions relating to reclamation see page 474.]

# RECREATON SECTION

*General Chairman, Stephen T. Mather, Director United States National Park Service*

*Secretary, Ansel F. Hall, National Park Service*

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## PROGRAM

*Monday, April 11, 2 to 5 p. m.*

THE FIELD OF RECREATION

Stephen T. Mather, presiding. Preliminary address by the chairman.

Address: Chauncey J. Hamlin, chairman United States National Conference on Outdoor Recreation, president American Association of Museums, "Recreation: The use of leisure time."

Address: R. E. Boardman, Playground Association of Victoria, Tree Planters' Association of Victoria, "Recreation in Australia."

Address: A. K. Powlinson, American Physical Education Association, supervisor of play and recreation, Honolulu, Hawaii, "Playgrounds: Their part in a national recreation program."

Ample time for discussion by all delegates was allowed after each address.

*Tuesday, April 12, 9 a. m. to 12 m.*

OUTDOOR RECREATION IN NATURAL AREAS

Ansel F. Hall, presiding.

Address: A. S. Houghton, Campfire Club of America, "A national program for outdoor recreation."

Address: Dr. Sazo Ujihara, expert of the Ministry of Home Affairs, Japan, "Outdoor recreation and the health program of Japan."

*Tuesday, April 12, 2 to 5 p. m.*

EDUCATIONAL OPPORTUNITIES IN RECREATION

Stephen T. Mather, presiding.

Address: Ansel F. Hall, chief naturalist in charge of the educational division, National Park Service, "Educational activities in national parks."

Address: Edwin H. Bryan, jr., curator of collections, Bisho Museum, Honolulu, Hawaii, "The museum: An educational and recreational medium."

*Wednesday, April 13, 9 a. m. to 12 m.*

RECREATION AND THE CONSERVATION OF NATURAL AREAS

Ansel F. Hall, presiding.

Address: A. S. Houghton, National Game Protective League, "Wild life conservation with relation to recreation."

Address: R. E. Boardman, Tree Planters' Association of Victoria, "The conservation of natural areas in Australia."

Address: Dr. M. Miyoshi, member of the Imperial Academy, Japan, "The work of preserving the national monuments in Japan" (illustrated).

*Wednesday, April 13, 2 to 5 p. m.*

I. THE PRESERVATION OF NATURAL AREAS FOR SCIENTIFIC STUDY

Dr. M. Miyoshi, presiding.

Address: C. J. Hamlin, president, American Association of Museums, "Studying nature in place."

Address: Dr. S. Uchida, expert of the Ministry of Agriculture and Forestry, Japan, "Solving the problems of bird migration by banding."

Address: Ansel F. Hall, chief naturalist, United States National Park Service, "Nature trails: An experiment in elementary science, recreation, and education" (illustrated).

II. UNSOLVED PROBLEMS IN OUTDOOR RECREATION

Ansel F. Hall, presiding.

A continuation of discussion of recreation in natural areas with special reference to the benefits to be derived from the formulation of a national educational and scientific program.

*Wednesday, April 13, 8 p. m.*

A joint program by the education, reclamation, and recreation sections.

ROYAL HAWAIIAN HOTEL BALLROOM

Colored scenic motion pictures of Grand Canyon National Park, Yellowstone, and Kilauea Volcano in action were followed by films showing some of the most notable reclamation and educational projects.

*Thursday, April 14, 12 m. to 3 p. m.*

RECREATION ADMINISTRATION

Richard T. Evans presiding.

Address: Stephen T. Mather, director, United States National Park Service, "Administration of the national parks of the United States."

Address: Dr. S. Ujihara, expert, Home Department, Sanitary Bureau, Japan, "Investigations for the selection of a site for a national park in Japan."

Address: Dr. Keiji Uyehara, president of the Japanese Landscape Architectural Society, "Nature preservation and national park problems in Japan."

*Thursday, April 14, 4 to 5 p. m.*

GENERAL DISCUSSION AND REVIEW OF CONCLUSIONS REACHED DURING THE CONFERENCE

Stephen T. Mather, presiding.

Address: Thomas A. Jaggar, director, Hawaii Volcano Observatory, "The opportunity for scientific research in the national parks of America."

# *PROCEEDINGS*

## *Monday Afternoon, April 11, 1927*

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### *Topic: The Field of Recreation*

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*Stephen T. Mather, Presiding*

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The session was called to order at 2 o'clock by the chairman, who said:

Outdoor recreation is the keynote of this section of the Pan Pacific Conference. Right here in Honolulu it is splendidly typified by the wonderful possibilities of the climate and beautiful countryside. During our visit we will not only have an opportunity of seeing recreation for ourselves but will also enjoy hearing from the individuals responsible for its development here.

I want to join my own word of thanks to what has already been said this morning at the plenary session. We appreciate very deeply the hospitality extended to us here by our friends. Naturally, we of the National Park Service are especially interested in the meetings of the recreation section because recreation in its many phases is the greatest objective of each one of our 19 national parks. One of the most spectacular of these parks is to be found here in Hawaii. In fact, it might almost be said that there are three national parks in the islands, inasmuch as Hawaii National Park is divided into three great sections—the stupendous extinct crater of Haleakala on the island of Maui; the summit of the great volcanic cone of Mauna Loa; and perhaps most remarkable of all, the great active volcano of Kilauea which presents a spectacle to be seen nowhere else in the world. It has been particularly gratifying to me upon returning after an absence of eight years to see the improvements which have been made in these remarkable areas. After the conference we will visit the islands of Maui and Hawaii and will see for ourselves what has been accomplished there to make Hawaii National Park accessible to all the people.

At this time I wish to welcome here all the delegates, both from the United States and also from other Pacific nations. We are particularly pleased to see the splendid group from Japan, and I recognize among them Doctor Uyehara, who made an exhaustive trip through our country studying the national parks and who, with his associates, has come prepared to tell us of many of the interesting developments in the recreational areas in his own country. We are pleased also to see Australia so well represented.

The chairman then called by name and introduced the following delegates:

Dr. S. Ujihara, expert of the Ministry of Home Affairs, Japan.
Dr. M. Miyoshi, member of the Imperial Academy, Japan.
Dr. S. Uchida, expert of the Ministry of Agriculture and Forestry, Japan.
Dr. K. Uyehara, director, Tokyo School of Landscape Gardening, Tokyo, Japan.
Dr. S. Hirota, director, Kobe Technical College, Japan.
R. E. Boardman, Playground Association of Victoria, Tree Planters Association of Victoria, Australia.
A. S. Houghton, National Game Protective Association, Camp Fire Club of America.
Edwin H. Bryan, jr., curator of collections, Bishop Museum, Honolulu, Hawaii.
Chauncey J. Hamlin, chairman, United States National Conference on Outdoor Recreation; president, American Association of Museums.
John S. McMillan, Roche Harbor, Wash.
A. K. Powlison, supervisor of play and recreation, Honolulu, Hawaii.
R. T. Evans, superintendent, Hawaii National Park, Hawaii.
Mrs. F. M. Swanzy, chairman, Honolulu Recreation Commission.
C. S. Judd, executive secretary, Board of Agriculture and Forestry, Hawaii.
A. O. Burkland, Geological Survey, Honolulu, Hawaii.
Mrs. E. Fullard-Leo, American Olympic Committee, New York.
Mrs. C. W. Winter (wife of Congressman Winter), Wyoming.
Charles F. Ede, Brisbane, Australia.
Mrs. R. T. Evans (wife of Superintendent Evans).

Resuming his remarks, the chairman said:

In our country the national parks are almost synonymous with outdoor recreation, and the oldest and best-known park of all is the Yellowstone. According to the wording over the archway, this park is "Set aside for the benefit and enjoyment of the people." We not only are concerned with the physical aspects of recreation but have also made a particular study of its educational possibilities and a measure of what can be accomplished in this respect is demonstrated in our park museums, lectures, nature-guide field trips, publications, and other educational activities. Later in this meeting we will consider this subject of education out-of-doors and the administration of recreational areas. At that time I shall have the pleasure of telling you something of the way in which our parks are administered.

The meeting this afternoon is largely one of orientation. We wish to consider in a broad way the subject of recreation as a whole. No

one is better qualified to give us a proper perspective on this subject than our very devoted friend, now chairman of the National Conference on Outdoor Recreation, Mr. Chauncey J. Hamlin.

## *RECREATION: THE USE OF LEISURE TIME*

*By Chauncey J. Hamlin*
*President, American Association of Museums*

I was interested when reading the official announcement of this conference to note that it was to be a conference on education, rehabilitation, reclamation, and recreation. From my point of view this order of subjects is correct, as the first three logically lead up to the crown of them all, recreation. It is a little difficult to define the word "recreation." I like to think of it as what we do with our leisure time. Most of us spend a certain amount of time sleeping, a certain amount working, and then we have a certain amount of leisure. It is what we do with this, our leisure time, that counts most toward the happiness and helpfulness of life, and this leisure time is what we call recreation; it is our own to dispose of absolutely as we will. During this time probably more goes into the formation of character than during any other time that we spend, and I believe that the ability to properly use one's leisure time spells to a considerable degree the state of civilization or culture that an individual or a people has reached. This subject becomes really of pressing importance to us as the work hours are lessening. Where we had a 12-hour workday one was so tired that he could not do much more in his leisure time than just rest. Now, however, the 10-hour day has come, and the 9-hour day and even the 8-hour day in many industries; then, too, there is the 5-day week introduced by Mr. Henry Ford; all of which make the problem of leisure time a more and more serious one.

The question that we have before us, as I see it, is not to persuade ourselves as to the value of recreation or the value of what we are going to do with our leisure time, but rather the organization of the community in the provision of facilities for proper use and enjoyment of leisure time. If you will, perhaps, it is just as well to consider a city as a unit in starting our discussion this afternoon. What should a municipality provide for leisure time? I assume each community ought to have its public library, because the reading of books is of course a proper form—a good form and a desirable form—of the use of leisure time. The community should also, from my point of view, have its museums of science, history, and art. It has been a great privilege to have been in Honolulu this past week and to

have had the opportunity of visiting the Bishop Museum, as well as the rare opportunity of being present at the opening of the Honolulu Academy of Art, one of the most beautiful art museums it has ever



MR. MATHER PLANTING A TREE AT THE PAN PACIFIC UNION CELEBRATION

been my opportunity to visit. Honolulu, with its splendid library and its museums, is providing for its community the finest type of recreation. Then, yesterday in the art academy we listened to a

symphony orchestra—another form of recreation. A music center, and a music school, then, are a part of the municipality's problem of providing for the proper use of leisure time.

I now come to what is really the key-note of this conference—the subject of "Outdoor recreation." Recently in Buffalo, my home, a city of 550,000, there was an organized effort to discover what there was within our own community in the shape of facilities for proper use of leisure time. I hold in my hand a publication (Recreational Survey, of Buffalo) and I will be glad upon my return to mail any of you a copy. It covers more or less fully the subject of both indoor and outdoor recreation. The survey covers an analysis of the playground needs of our community and the type of playgrounds to be provided. From playgrounds we stepped up to small parks and athletic fields, then to larger community parks and presented a program for future expansion. On account of the great number of automobiles in our cities, and also on account of the fact that land has become so difficult to acquire in the large cities, we have been forced to develop in our country systems of county parks easily reached by automobile. In our survey we have touched on the need for the early acquisition of such areas.

In considering the subject of recreation and proper use of leisure time, every community should organize a self-survey and adopt a comprehensive program including plans for extension of libraries, museums, dramatics, music, playgrounds, small parks, large city parks, and country parks with camping facilities. Some people feel it is a dangerous thing to put down in black and white just what you like. Put it down, no matter how big it looks—no matter how many dollars, pounds, or yen it is going to cost—put it down—then start out and try to get it. Sell it to the community in every possible way, personally and through the newspapers, but make a program. That is what we have been trying to do in the National Conference on Outdoor Recreation which President Coolidge called two years ago. Before making that program it was necessary for us to arrive at certain facts just as we have tried to do in a smaller way in Buffalo. A comprehensive nation-wide survey of municipal and county parks has just been completed for the national conference by the Playground and Recreation Association of America. Another survey of State parks has recently been completed by the National Conference on State Parks. Lately, cooperative surveys have been extended to various national areas. It is the hope of the national conference to publish a program for national recreation, and I am trusting that when we come to do so we will have the courage of our convictions and develop a program of such nature that even though it may not be accomplished in our generation, it will be something worth while to work for. The one big message I have to bring at

this time is the advisibility of a survey of your own community, contrasting its needs with what is now accomplished and formulating a comprehensive program. If the goal is kept in sight the community will eventually achieve it.

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*Discussion*

The chairman referred to the parks of Denver and Los Angeles, the latter having financed a county park independent of the State and National Governments.

Mrs. SWANZY. How could such an organization be started? How is Denver handling its community organization?

The CHAIRMAN. In Denver the organization was started by voluntary subscription; finally the community agreed upon a civic program.

Mrs. SWANZY. Here in Hawaii a proposed tax on gasoline met with opposition; the lack of funds is a great handicap.

Mr. HAMLIN. My experience leads me to say there should be a recreational organization in every city. In some way funds should be raised to carry forward a survey. Buffalo has a city-planning association, cooperating with the city-planning commission and parks commission. It is very necessary to have a body of citizens to cooperate with the official bodies. Organize a committee to help, but the committee should by all means not be at loggerheads with the other bodies.

The CHAIRMAN. Conditions differ in different States. New York has a great system of State parks—Palisades Park is convenient to New York City and Allegheny State Park close to Buffalo. Many States have forest areas. The County of Los Angeles has 5,000 acres of national forest turned over to the county for administration and the municipality provides liberal appropriations. The West and East seem to differ greatly, especially in the matter of the facility of locating outdoor recreational areas.

Mrs. FULLARD-LEO. As I see it, the important local problem is a city one. Eighteen years ago New York City had very few playgrounds, but now there are hundreds. Physical development should start with the boys and girls of the restricted areas. There is need for even small playgrounds in congested districts.

Mr. HALL. There comes to my mind what is probably the greatest achievement of any place in the world in the creation of parks in a congested area. When visiting New York last year I stopped at the State and county parks along the Hudson River between New York and Palisades Interstate Park. One of the things that impressed me most was the magnitude of the sums expended in these parks; sums many times greater than the appropriation for all

national parks. I wonder if Mr. Hamlin could tell us something of this park development.

Mr. HAMLIN. Mr. Hall probably refers to the parks of Westchester County. I would not mention the millions of dollars appropriated yearly, because the total may have been increased since I left New York, but the last I heard was thirty millions. As a matter of fact, a very considerable portion of these funds go into the creation of parkways. These cost millions but they also increase property values by enormous sums and in this respect actually prove to be a paying investment. New York City, with its millions, and the people of the State, have been very, very generous. The State is divided into eight regions. The State of New York has three and one-half million acres in development under State-park program. Pennsylvania, too, has a large system of State parks.

Mr. HOUGHTON. Looking over the history of New York the past 10 or 12 years, the park development has been progressive. In 1916 the first park bill appeared as a referendum measure. At that time the appropriation was $10,000,000. Last year the appropriation was one hundred million. The measure is progressive.

The CHAIRMAN. I now wish to introduce Mr. R. E. Boardman, from Australia, who will tell us of the broader phases of recreation in his great country.

## *RECREATION IN AUSTRALIA*

*By R. E. Boardman*

*Playground Association of Victoria, Australia*

I have prepared no papers because I am conscious of the limitations of our Commonwealth in the matter of out-of-doors recreation when it is considered in such a vast way as has been just brought out by the previous speakers. The topic of recreation is a big one in Australia, where there are 3,000,000 square miles—an area about equal to that of the United States. The total population of the six States numbers about 6,000,000. The climate in the north is similar to that which we find here in Honolulu and sometimes hotter; farther to the south it is occasionally cool enough so that snow and ice are not an uncommon sight. At this time of year we are having our winter; as most of you know, the seasons south of the Equator are just the reverse of those in the Northern Hemisphere.

I have come to this conference with the feeling that I shall take home with me information much more important than I shall be able to contribute. It is my great regret that my duties at other section meetings will prevent my being present at every discussion. It is a tremendous inspiration to me to note the kindliness and mutual

understanding which have been apparent from the moment that this conference convened and it has been a great satisfaction to note the splendid way in which other countries are developing the recreational idea.

Our Federal Government handles our major recreational matters. The State government is very similar to that in the United States, legislative authority being vested in the Upper and Lower Houses of Parliament. Large areas have been set aside as national parks, in which the country is being preserved in its natural state. In these lovely areas of sublime scenery the visitor often meets park rangers on horseback; these men are intrusted with the administration of the parks and, as in your country, one of these most important duties is the prevention and protection against theft. We realize that both the creation and maintenance of these great natural areas is possible only with public sentiment in favor of their preservation, and therefore we have entered upon a campaign of public education to bring before the people a realization of the importance of these great natural areas. This is somewhat more difficult in our country than it is in the United States on account of the fact that there is at the present time much more available virgin land. The population of the United States is eighteen times as dense as that of our country. One of our most beautiful parks has been established in the Blue Mountains just outside of the city of Sydney, where there are found splendid examples of the fauna and flora of the mountainous regions of Australia. I have been particularly interested in the enthusiastic interest shown in the trees and plants of this park.

In Australia the city parks usually lie between the business centers and the remote suburbs. Usually we plan our landscape gardening so as to include as many as possible of the native trees and shrubs, of which there is a large and wonderful variety. Western Australia is especially fortunate in having large trees which bear beautiful blossoms. In Kings Park, in particular, the native flora will be kept as a wild flower garden, being preserved in as nearly as possible its natural state.

In Australia we have had to face attempted encroachments upon our parks; problems, I am sure, which are not unique to our country. One-third of our population is in two large cities. This, of course, presents a problem not only in the setting aside of areas as parks but also in preserving them intact. Just as an example, we have one large wilderness area which has been preserved for some time as a botanical garden, and as such has not only added greatly to the enjoyment of residents but has also been an attraction to world travelers. Recently an attempt was made to encroach upon this area by using a portion of it as the site for certain public buildings. The buildings themselves were, of course, worthy projects, but it

would have been disastrous to the park, in fact to the whole park idea, to start such a precedent. Both the press and public opinion are against such "nibbling," and so for the present the issue is dormant.

I might mention several other phases of recreation and conservation which are of particular interest in our municipalities. One of these is the system of nature study which has been introduced in practically all of the schools. Another is the institution of Arbor Day, which is nationally important. Reforestation is one of our big problems, and closely related to it is the problem of conservation and utilization of our water. Our natural forests consist almost entirely of hardwoods, but we are gradually introducing softwoods, or cone-bearing trees. In a country of low rainfall the balance of nature is easily upset and the denuding of forests also results in the disappearance of vegetated cover and consequent rapid erosion. We are attempting to control such erosion by the planting of forests.

Most of the playgrounds in Australia are in charge of municipal councils. We have had playgrounds for a number of years and feel that they are necessary, especially in the suburban slums. At present there is no supervised play in our country such as is the general rule in the United States. Many of us look forward to this type of constructive supervision, but there is at present in Australia considerable controversy as to whether or not such supervision is advisable. One group contends that supervised play prevents individual initiative and the other that it provides valuable training. I might mention other subjects, such as gardening week and the formulation of building regulations, conducive to better living accommodations.

In closing, let me again express my appreciation for the exceedingly interesting and valuable material which is here being presented upon the subject of recreation. I shall carry to Australia a number of ideas which I hope can be applied in our country.

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*Discussion*

The CHAIRMAN. You will doubtless find interest developing in parks in Australia. In our country the apartment houses of our large cities make it absolutely necessary to provide recreation centers.

Mr. JUDD. I note that Mr. Boardman spoke of seeing a few eucalyptus trees here in Hawaii. It may be on account of certain climatic conditions that we have no more gum trees. They grow at about 2,000 feet altitude, but not near the sea. Some varieties grow better here than in Australia. This is true of many trees from the tropics. Some of our trees blossom in February and March, others this time of year, still others later in June and July.

(Five-minute recess.)

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(Five-minute recess.)

The Chairman. Continuing the discussion of the broader phases of recreation, we now come to the subject of playgrounds. It gives me pleasure to introduce Mr. A. K. Powlison.

## *PLAYGROUNDS: THEIR PART IN A NATIONAL RECREATION PROGRAM*

*By A. K. Powlison,*
*Supervisor of Playground Recreation, Honolulu*

To follow the development of the recreation movement in America, it is necessary to know something of the history of play in foreign countries. To understand its significance in the life of the Nation it is important to have some conception of its sources and its influence on various nations. The character of amusements which occupy the leisure hours of the people may change profoundly not only the habits of the individual, but the character of the whole people. A study of the types of recreation indulged in by the nations which have led the world, shows the parallelism between the sports and the pastimes and the general character of the people.

If it is true that the use of free time fixes and determines habits of mind and characteristics of nations, then it is particularly important for the recreation worker to know something of the leisure time life which has developed certain customs. In almost every way a peoples' athletics are representative of its customs and traditions and are a means of determining the trend of a nation's life. Decadent nations find enjoyment in bull fights, cock fighting, professional wrestling and the like; autocratic nations specialize in the disciplined, machine-like and systematic gymnastics; and democratic nations produce all sports. All through history, democracy has been accompanied by an interest in amateur sports. Team games and democracy are inseparable; the one goes with the other as a training for free citizenship. The nationalities that have never had any practice in self-discipline, nor even any experience in team play when allowed free reign gang together in destructive moods. To make orderly citizens of this material is a hope that the playground is trying to realize.

So universal is the impulse to play, so fundamental is it to life, that there is no part of the world in which play and play traditions do not exist in some form. Recreation is basic to the integration of the foreign-born into American life and nothing is of more importance in the citizenship program. As America is helping foreign countries

to develop play centers, so the play movement in America has benefited by the play traditions and physical education programs of other countries. Among the countries which have most profoundly affected the play movement in America are Germany and England.

The playground movement throughout the world is still in its infancy. The first supervised playground in the United States was established in Boston in 1886 with a so-called sand garden. The movement grew steadily in that city where three years later 21 playgrounds of this type had been developed. Meanwhile Chicago was making provision for the establishment of playgrounds, the first in connection with Hull House. New York, Philadelphia, Pittsburgh, and other cities were starting programs and the next 10 or 15 years saw a rapid development in the establishment of playgrounds for the children in settlement yards, school yards, and parks.

The modern play movement in Germany dates from 1892, when administrators of public education recognized public playgrounds in which recreation ideals should be kept permanent. In 1904 at least 400 public playgrounds were opened in Germany. There in the development of play centers, the emphasis has been on the recreative side. The ability to play is counted an essential part of the training of the English gentleman, and the existence of large numbers of public cricket and football fields throughout the land is evidence of the love of sports which permeates the life of Great Britain.

Following the World War, through the work of the Junior Red Cross, a number of playgrounds, modelled on American grounds, were established in France, Belgium, and Italy, and the workers were trained. In China, India, and Japan the playground idea is spreading rapidly, and a number of playgrounds have been established. Interest in recreation is spreading in the central European countries and modern equipped playgrounds are being established. In the Panama Zone, here in Hawaii, in the Philippine Islands, and in Australia are to be found organized playgrounds and highly developed sports. In South America, particularly in Uruguay, playgrounds are increasing rapidly and the Government is spending large sums of money on facilities and equipment.

The Playground and Recreation Association of America was formed in Washington in 1906. The purpose of this association is to promote normal, wholesome play and public recreation. It has worked particularly for the establishment of year-round recreation systems supported by municipal funds. The association also conducts a correspondence and consultation service; publishes a monthly magazine, "The Playground," and handbooks, pamphlets, and bulletins; and holds district conferences and recreation congresses. At the time of organization of the Playground and Recreation Association of America in 1906, 41 cities were conducting playgrounds. In 1925, 748 cities

In our country not only the older men have sports and bowling contests, but the younger men also.

The CHAIRMAN. We should be glad to hear further discussion on athletics, especially on the ways and means which might be employed in getting such activities started.

Mr. CROSSMAN. Soon after the war, memorials for the boys were talked of. In our community we talked over different things proposed as memorials. The best proposal was that we buy 15 acres of vacant land and develop it as a recreation center. It was purchased and then completely laid out. Then the whole town was mobilized in a formation that started by a parade one morning at 8 o'clock. Everybody lent a hand, and it was estimated we did from $3,500 to $4,000 worth of work that day. We now have tennis courts, ball courts, and an American Legion house.

(The chairman read the program for Tuesday morning.)

Mr. BOARDMAN. With your permission, Mr. Chairman, I wish to express appreciation of the remarks made by Mrs. Fullard-Leo and Mr. Powlison. Mr. Chairman, may I say that Mrs. Fullard-Leo has struck the great note of better understanding of the peoples of the Pacific. As Walter Hines Page expressed it—a better understanding of English-speaking peoples.

(Adjournment.)

## *Tuesday Morning, April 12, 1927*

### *Topic: "Outdoor Recreation in Natural Areas"*

*Ansel F. Hall, Presiding*

The session was called to order at 9 o'clock by the chairman.

Mr. MATHER. I am very sorry to advise that Mr. Hamlin is ill and not able to preside at this morning's session. I will, therefore, turn the morning meeting over to our chief naturalist, Mr. Hall.

The CHAIRMAN. We all regret, I am sure, Mr. Hamlin's inability to be with us this morning.

Yesterday's meeting was one of orientation; we attempted to cover the field of recreation as a whole and were rewarded by some highly valuable remarks by Mr. Hamlin, by Mr. Boardman, the Australian delegate, by Mrs. Leo, and others. I greatly appreciate the fact that everyone has entered into the spirit of the conference by joining the discussions, for the value of these meetings depends as much upon the discussions as upon the prepared addresses. We can not get from each other all of the facts that will help us in our specific problems unless we make known our wants. In this section, therefore, we have allowed ample time for discussions following the papers, and let me urge you to have no hesitancy in discussing the problems presented or in introducing new ones, or new angles on the problems before us. To-day we are again considering the broader phases of recreation, especially in relation to outdoor recreation in natural areas. The subsequent meetings will be devoted to other more detailed topics such as conservation, wild-life protection, educational possibilities in recreation, administration of recreation areas, etc.

Yesterday Mr. Hamlin spoke of the vital need of a recreation program. He is particularly qualified to speak on this subject, as he was appointed by President Coolidge as chairman of the National Conference on Outdoor Recreation. This conference effected something never before attempted in our country, and I believe in any other country—namely, the getting together of all organizations and individuals interested in any phase of the outdoors. We have the good fortune to have with us to-day a delegate who was present at

that conference and who can tell us something of the subjects discussed at that time. I wish to introduce Mr. A. S. Houghton, representing the National Game Protective Association and the Campfire Club of America.

## *A NATIONAL PROGRAM FOR OUTDOOR RECREATION*

*By A. S. Houghton*
*Campfire Club of America*

I am rather appalled at the magnitude of the topic "A national program for outdoor recreation"—indeed, I wish to disclaim the choosing of such a broad comprehensive topic, upon which I feel I can give only the most elementary information in the brief space of time allotted to me. I feel that I could in no way tell the members of this conference my ideas of what a national recreational policy should be; instead I shall confine myself to what has already been done in America in coordinating the various recreational possibilities and in formulating a broad national recreational program. This may give you a few elementary ideas to take back to your own countries with you, and it can be supplemented with more detailed information which will soon appear in the report of the President's National Conference on Outdoor Recreation.

Before we can have a national program either for outdoor recreation or for any other group of activities it is vitally necessary to make a detailed study of sectional conditions. For example, we have in America any number of clubs and associations interested in the out of doors. Some of these organizations are interested chiefly in wild-life protection and preservation of species from extinction; others are interested in mountain climbing; others have organized because of their mutual interest in hunting or fishing; other groups are interested in reforestation or any of the other important forestry subjects. I have the good fortune of representing two such organizations and have a great number of friends in many others. Taking all of these groups together they are working for a common end, but sometimes they are antagonistic. The first and most important prerequisite to any national program for outdoor recreation, therefore, is to bring together all these organizations so that cooperation will supplant antagonism.

It was a man of broad vision who suggested to the President the calling of a conference on outdoor recreation with an idea to the formulation of a broad national program which should be not a program dictated by the Federal Government but a program originating from the combined interests of all organizations interested in

out of doors. Such a conference costs a great deal of money, but that should not deter any nation from calling a similar one. The money is not spent for to-day only but for all ages to come. I will read what the conference has undertaken:

The National Conference on Outdoor Recreation was organized in 1924 at the request of President Coolidge. On April 14, 1924, the President issued a statement stressing the importance of outdoor recreation. He appointed a committee of Cabinet members to consider the subject. This committee reported to the President indorsing his views and advising that a conference be called of national organizations to advise with the President's committee. Thereupon, the President requested his committee to call such a conference. The call was issued and 128 national organizations associated themselves into a conference at a meeting held in Washington, D. C., May 22–24, 1924.

The conference is a cooperative association of many organizations, national in scope, which are interested in the promotion and development of one or more kinds of recreation, in the use of which the land, water, forest, plant, scenic or wild life resources of the United States are essential.

Its function is to assist in the working out of a national policy which will coordinate the activities of Federal, State, county, municipal and unofficial agencies in the field of outdoor recreation and to promote the development of the recreational resources of the country and stimulate their use. Outdoor recreation is a product of conservation and when completely developed represents a balanced economic and social use of natural resources. Promotion of the conservation and wise administration of natural resources is, therefore, a coordinate function of the conference.

The conference is not an executive agency. Under the permanent organization adopted, the work of administration is carried out through close liaison between the President's committee, composed of five members of the Cabinet representing the interests of the Federal Government, and the executive committee of the conference, representing the unofficial agencies and the member national organizations. A number of standing committees, official and unofficial, representing major fields of the conference work, are directly affiliated with the executive committee.

The development of a national recreation policy presents many problems particularly in land economy and education. The conference defines broad policies within these fields and fosters special projects for their expression. Through its executive committee, the conference seeks funds to finance special projects, and places their execution in the hands of experts and select committees of the member organizations. Within the field of land economy projects have been selected for the development and use of the recreational resources of playgrounds, athletic fields, recreational areas and outing parks within regions of congested population; the development of the recreational values of highways and waterways; and the promotion of parks and forests within wilderness areas, including the conservation of wild life. Projects within the educational field seek to stimulate use of recreational resources through the encouragement of outdoor sports, knowledge of natural history, and the promotion of public economy and social welfare through the sound administration of natural resources.

Pursuant of this policy funds and other resources have been obtained to undertake or carry to completion an initial series of field studies by experts and select committees of the member organizations:

1. Recreation survey of State Parks and forest lands by the National Conference on State Parks. (Report published.)

2. Classification and adjustment of the coterminus boundaries of national parks and national forests by a subcommittee appointed by the President's committee. (Seven projects have now been completed: The Sequoia, Mount Rainier, Rocky Mountain, and Grand Canyon National Park projects have been approved by Congress; the Yellowstone Park project is pending action by Congress; field work on the Yosemite and Crater Lake projects has been completed and formal action is under way.)

3. A study of municipal and county parks and forest systems of the United States by the Playground and Recreation Association of America and the American Institute of Park Executives. (Report in process of publication.)

4. A study of the recreational needs of industrial workers by a committee of representatives of the United States Department of Labor, United States Chamber of Commerce, the Playground and Recreation Association of America, the Brotherhood of Railway Trainmen, American Federation of Labor, Amateur Athletic Union, Knights of Columbus, Young Men's Christian Association, and Young Women's Christian Association. (Preliminary report published.)

5. A recreational survey of the Federal public domain and reservations by the American Forestry Association and the National Parks Association. (Legislation for classification of public domain already accomplished; report in process of publication.)

6. Projected study of a plan for the group coordination of all wild-life agencies by a select committee representing the Boone and Crockett Club, Camp Fire Club of America, International Association of Fish, Game, and Conservation Commissioners, American Game Protective Association, National Association of Audubon Societies, Izaak Walton League, Association of Western Game Commissioners, and the Montana Sportsmen's Association. (Preliminary draft published.)

7. A study of a cooperative plan of game management for the conservation and administration of the southern Yellowstone elk herds in the vicinity of Jackson Hole, Wyo., by a subcommittee appointed by the President's committee and representing the State of Wyoming, Wyoming livestock interests, dude ranchers, the United States Biological Survey, the United States Forest Service, the General Land Office, the National Park Service, the American Society of Mammalogists, the Izaa Walton League, the Camp Fire Club of America, the American Game Protective Association, and the Boone and Crockett Club. (Report now in process of publication.)

8. A study of recreation land values by the Russell Sage Foundation.

9. A study of training necessary for recreation leadership by a committee representative of the Russell Sage Foundation, Playground and Recreation Association, Catholic Boy's Brigade, Girl Scouts, Young Men's Christian Association, Young Women's Christian Association, Boy Scouts, Women's Division National Amateur Athletic Federation, Woodcraft League, Amateur Athletic Union, American Legion, Camp Fire Girls, National Congress of Parents and Teachers, General Federation of Women's Clubs, and the Camp Directors Association.

10. A survey of the recreational value of highways by the United States Chamber of Commerce.

11. A study of the relation of the State to outdoor recreation by a select committee.

12. A study of the popular educational facilities afforded by natural history museums by the American Association of Museums.

13. A survey of wild-life refuges by the United States Biological Survey.

14. A study of the effect of stream pollution on wild-life and recreational resources by the Izaak Walton League.

15. Coordination of State outdoor agencies with the national conference.

16. A study of land uses as a basis for the development of national planning by a select committee under the auspices of the Federated Societies on Parks and Planning and representing the United States Department of the Interior, the United States Department of Agriculture, the United States Chamber of Commerce, the Institute for Research in Land Economics, American Forestry Association, American Society of Landscape Architects, National Conference on State Parks, American Civic Association, American Institute of Park Executives, American Park Society, National Conference on City Planning, and the National Parks Association.

17. Legislative projects—

(*a*) Establishment of refuges for the further protection of migratory birds through a committee representing the National Association of Audubon Societies, the American Game Protective Association, the Izaak Walton League, the International Association of Fish, Game, and Conservation Commissioners, and the Western Association of Game Commissioners.

(*b*) Permanent preservation of the leading types of American big game.

(*c*) Federal forest purchases in the East through the McNary-Woodruff bill.

(*d*) Forest-fire protection through the Clark-McNary law.

(*e*) Preservation of the redwoods through the Save the Redwoods League.

(*f*) A national arboretum (approved by the Sixty-ninth Congress).

(*g*) National Park additions through a subcommittee of the President's Committee on Outdoor Recreation (four projects approved by the Sixty-ninth Congress).

All these are projects of tremendous importance and it is good to know that at last practically all organizations interested are now working for the same common end of outdoor recreation and conservation. It seems to me that a national program should provide for (1) a definite constructive outline of all the major recreation projects of the country; (2) a means of correlating the activities of all individual organizations interested in the out-of-doors; and (3) a central office for information.

We by no means want the local organizations to feel that they have lost their individuality, but we do want them to feel that there is a central office where they can get advice and information resulting from broad national surveys.

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The CHAIRMAN. We thank Mr. Houghton for introducing this subject of a national program for outdoor recreation. Many of the delegates will have questions on this subject, or can tell us about programs in their own countries. Before opening the meeting for discussion I should like to point out the matter of the changing viewpoint during the past decade. It is apparent to all that municipal recreation is vitally necessary. In some countries it is so apparent that it is accepted as part of the scheme of things. The subject of wilderness recreation, however, is not so apparent. We find in the National Park Service that we must fight to have certain areas set aside and fight to maintain them from encroachment by

private enterprise. The problem of wilderness recreation is quite distinct from municipal recreation in being inseparably linked with the problem of conservation of wild areas.

The great natural areas in the national parks of our country were almost without exception set aside to preserve our most remarkable scenic features. Yellowstone Park is a good example. Prior to the creation of the park in 1872, the people had heard weird tales of this wonderful place and a trapper who had passed through this region had told of the geysers, the marvelous hot springs, and the beautiful Yellowstone Canyon. At first these accounts were discounted but finally public curiosity was aroused and some prominent citizens took a trip through this marvelous country. Sitting before the campfire during one of the last nights of their trip they discussed the possibilities of exploiting the place. One man, Cornelius Hedges, said, "Why destroy these wonders? Why not save them for the benefit and enjoyment of all the people?" And this latter phrase stands to-day as a watchword at the entrance of Yellowstone Park. Later we will discuss national parks, but I wanted here to introduce the thought that the conservation idea was responsible for the setting aside of our wilderness areas for the permanent recreation of all the people. The wilderness is fast disappearing and leaving us only a few natural areas.

I see that Dr. Sazo Ujihara, of Japan, is now here. He is expert of the Ministry of Home Affairs of Japan, and, as head of the Japanese sanitary bureau, will tell us about the recreational program in Japan. I take pleasure in introducing Dr. Ujihara.

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## *OUTDOOR RECREATION AND THE HEALTH PROGRAM OF JAPAN*

*By Sazo Ujihara*

*Expert of the Ministry of Home Affairs, Japan*

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It is a great pleasure and privilege for me to address this notable gathering this morning upon a subject in which I am very deeply interested, and in which I hope to interest you.

It is now 50 years since Japan first began to adapt to her people and her circumstances those portions of the American and the European systems of education that she found adaptable and useful. As His Excellency, Secretary of the Interior Hubert Work, said in his splendid address yesterday morning, the educational system of no country has been developed without considerable borrowing from the experience and practice of other systems. Japan is not an exception. We owe a great debt to our neighbors, particularly to the United States and Europe, after whose educational systems we have modelled ours. A very interesting phase of our educational system is

outdoor recreation, with which the problem of public health is closely interwoven. Outdoor recreation is a comparatively new thing in Japan. Courses in physical education in the public schools have been the exception for the last 50 years. Until recently there were few parks and fewer playgrounds, and there was little interest in athletics. To-day we find a marvelous transformation. Sports are extremely popular, world-famous athletes are being developed, parks and playgrounds are being built, and huge stadiums are being erected.

The entire Japanese people seem to be taking to sports and outdoor recreation as a duck to water. Honolulu has good reason to remember Takaishi and his team of swimmers who defeated the best swimmers of Hawaii not long ago; and that is quite an accomplishment, I am sure. In tennis, track and field, baseball, and other sports, our young men and women are becoming more and more competent to match their ability with the best athletes of other lands. Even to-day our Waseda University baseball team is on its way to the continental United States for a series of games there. In the Olympic games, held at Stockholm in 1912, at Antwerp in 1920, and at Paris in 1924, Japan was represented by teams that showed improvement at each successive tournament. In the far-eastern Olympic games, in which the cream of athletes from the Philippines, China, and Japan compete, Japan's teams have always excelled, making steady progress with the years.

In 1924 the home department sponsored a track and field meet, to dedicate a shrine to the great Emperor Meiji and to celebrate the opening of a new stadium and amphitheater in Tokyo, which has a seating capacity of between 70,000 and 85,000. You will see a photograph of the amphitheater in the frontispiece of the booklet entitled "A General Survey of Education in Japan," copies of which may be obtained at the speaker's desk to-day. Some 3,000 young men and women from all over Japan competed in the tournament. Last year the number increased to 25,000. To-day there are large stadiums in Tokyo, Osaka, and the Niigate prefecture. There is a stadium in the capital city of nearly every prefecture. The number of parks and playgrounds has also increased at a very rapid rate.

Why has this remarkable change in Japan taken place? May I say that it is due to an increasing conviction among the Japanese people that outdoor recreation, or physical education, is a necessity if the vitality of the Nation is to be adequately preserved.

Soon after the World War the sanitary bureau of the home department commenced an investigation into the causes of the general prevalence of consumption and the high infant mortality rate among our people. It was found that so far as our health organization was concerned it was equal in standard and work to American and European organizations. But something was certainly lacking.

During 1920 and 1921 I went to Europe and to America to see if I could discover what it was that was so sorely lacking in our health system. Briefly, I found that it was physical education and outdoor recreation. This meant two things: First, my people must be taught to realize the importance of outdoor recreation; and second, they must be furnished with adequate facilities and training for such outdoor recreation and sports.

And so we in Japan have been carrying on an intensive, nation-wide campaign to educate the people into a fuller appreciation of the value of outdoor exercise, and this work is bearing fruit with increasing abundance each year. Along with this educational work we have been increasing and improving educational facilities by building more parks and playgrounds, ball fields and stadiums, bathing beach facilities, and the like.

Fencing, jujutsu, skiing, skating, swimming, tennis, and the various outdoor field and track sports are becoming intensely popular with the people. The department of education urges every school pupil to take up physical education, and, by cooperating with the home department, which has charge of parks and playgrounds and public health administration, is helping to bring the desired changes in the health situation in Japan.

According to statistics compiled by the department of education, the average 20-year old Japanese woman to-day is 2 inches taller than the average woman of that age 20 years ago, while the average young man of 20 has become 1 inch taller. The weight of the average young person, naturally, has increased in corresponding degree. Take the boys attending our higher schools, who are from 18 to 20 years of age. They are, on the average, from 5 feet 5 inches to 5 feet 7 inches in height, which means that the average boy is from 3 to 5 five inches taller than I am. I belong to the first generation. They belong to the second. I wonder how tall the third generation men will be?

The military conscription examinations show that the Japanese young men's physical condition is undergoing a gradual improvement with each passing year. Statistics of the sanitary bureau point out that infant mortality, consumption, and general mortality are gradually decreasing, the downward trend showing its initial drop in 1921.

Outdoor recreation is regarded by the average Japanese citizen to-day as being almost as essential to his daily life as the food he eats and the air he breathes. He is gradually coming to see the truth in the statement that "life is a sport and sport is life." Also, that "public health" and "public wealth" have many elements in common that may be combined.

As His Excellency Secretary Work said yesterday, we have come to this conference to learn from one another. I hope what little I

have said may have been of some interest to you. And I am sure that we from Japan have much to learn from the other delegates to this conference.

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(The following paper was prepared for this meeting by Doctor Ujihara, but was not read:)

## *THE DEVELOPMENT AND PRESENT CONDITION OF PUBLIC PARKS AND PLAYGROUNDS IN JAPAN*

*By Sazo Ujihara*

*Expert of the Home Department, Sanitary Bureau*

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There have been many parks in Japan, for a large number of grounds belonging to shrines and temples and other large gardens have from old times been widely used as public gardens, and they may almost be said to have developed together with the Japanese nation. Foreign tourists who come to Japan to visit places noted for their beauty or historic associations are astonished to see many fine public gardens which have histories of over a thousand years. But the opening of parks under the influence of western ideas has been since the Meiji Restoration; that is, about 1870, or nearly 60 years ago, and it was since 1897 that there has been a marked increase in the number of modern parks. Upon examining those, the dates of the opening of which are definitely known, we find that there were 15 parks in 1897 managed by prefectures, 31 by cities, and 40 by towns and villages, making in all no more than 86; but since that year there have been opened 18 parks managed by prefectures, 115 by cities, and 338 by towns and villages, making in all 471 parks. The following table, which gives the dates of opening and classes of public bodies managing the parks, shows the course of development of public gardens:

| Periods | Managed by— | | | Tota |
|---|---|---|---|---|
| | Prefectures | Cities | Towns and villages | |
| 1868–1872 | | | | |
| 1873–1877 | 8 | 11 | 9 | 28 |
| 1878–1882 | 3 | 6 | 6 | 15 |
| 1883–1887 | | 5 | 7 | 12 |
| 1888–1892 | 2 | 5 | 6 | 13 |
| 1893–1897 | 2 | 4 | 12 | 18 |
| 1898–1902 | 5 | 10 | 37 | 52 |
| 1903–1907 | 3 | 16 | 38 | 57 |
| 1908–1912 | 5 | 23 | 57 | 85 |
| 1913–1917 | 2 | 31 | 83 | 116 |
| 1918–1922 | 2 | 18 | 64 | 84 |
| 1923–1925 | 1 | 17 | 59 | 77 |
| Total | 33 | 146 | 378 | 557 |

The opening of playgrounds, tracks, and fields for public use was later than that of public parks, and with the exception of those attached to educational institutions, may be said to have begun within the last ten-odd years. According to investigations made at the time, their actual number was 312 in January, 1925, and as their development within the last few years has been extremely rapid, their present number is believed to be far in excess of that above given.

Further, according to investigations made by the sanitary bureau of the home department, the actual number in January, 1925, of public parks and gardens which are opened with the object of furthering the public health of the country is here given, classified according to the bodies which are their chief managers:

| Under chief management of— | Number of public parks or gardens | Total area in ares | Average area in ares |
|---|---|---|---|
| Nation | 1 | 60 | 60 |
| Prefectures | 39 | 179,758 | 468 |
| Cities | 168 | 109,508 | 652 |
| Towns and villages | 399 | 102,866 | 258 |
| Hamlets | 69 | 9,308 | 135 |
| Shrines and temples | 43 | 12,652 | 294 |
| Schools and colleges | 3 | 233 | 116 |
| Companies | 53 | 35,444 | 669 |
| Foundational juridical persons | 6 | 3,628 | 721 |
| Preservation societies | 19 | 7,452 | 397 |
| Young men's associations, educational societies, and other bodies | 117 | 30,757 | 263 |
| Private individuals | 207 | 61,894 | 299 |
| Total | 1,124 | 553,554 | 491 |

NOTE.—Those whose managing bodies are unknown are excluded. An *are* is 119.6 square yards.

With the exception of 4, whose managing bodies are unknown, the number of parks in Japan which are under the management of the nation, prefectures, or other public corporation is 607, and those managed by those other than the above mentioned, number 517, making a total of 1,124.

As the town-planning act is in operation in all the great cities of Japan, the number of modern parks has increased; and, moreover, with the rapid progress and spread of sports and athletics throughout the country, there has been a sudden increase of tracks, fields, and playgrounds formed on a large scale. The opening of swimming pools and various plans made for purposes of recreation are annually increasing so that the progress that will be made within the next few years will, it is believed, be most astonishing.

### *Discussion*

The CHAIRMAN. I wish to thank Doctor Ujihara for his very interesting paper. Are there any questions?

Mr. HOUGHTON. I should like to ask the delegate from Japan if there is much camping done there, in the forests and mountains.

Doctor UJIHARA. Yes.

Mrs. FULLARD-LEO. As perhaps the Japanese delegate did not understand the question, I should like to speak from the viewpoint of a visitor in Japan. I do not know of any country in the world where recreational work is carried on more fully than in Japan, and I want to go on record in this matter. It is remarkable what they have done. The foreign visitor will find at each railway station printed signs with all information as well as guides to direct him to the natural areas he wishes to see. All this information is given by the Government tourist bureau. Every holiday you will see hordes of people going into the mountains or the country. All along the roads and trails are rest houses and tea houses and you can go by foot or rickshaw around Nikko or Lake Chuzenji enjoying scenes of wonderful beauty. They are exceedingly thoughtful of the visitor and signs are printed in both English and French for foreign visitors. The Japanese take all these things as a matter of course and so do not mention them. In the matter of physical culture the Japanese have made great strides. At the last international athletic meet a Japanese girl held the women's record; this includes running, jumping, etc. Then, of course, their swimmers have had remarkable success. The Japanese, too, have recently built many stadiums, and the industrial firms realize the importance of recreation. One firm in Tokyo has built a swimming pool for its employees. They have not only adopted our methods but are going ahead of us. I wish everyone here might go and see what Japan has done along these lines.

The CHAIRMAN. Thank you, Mrs. Leo. Your remarks have been very interesting, especially about information for foreign visitors placed at the railway stations, and it seems to me that this is one idea we might carry away with us. I do not know of anything just like it in our own country. Do you mean that this information is placed upon a bulletin board?

Mrs. FULLARD-LEO. At Kamakura, for instance, there is a public map of the whole district, and the mileage to points of interest is given, together with other information. This is given in French and English and small printed guides may be obtained. At the time I was there I was getting some information for the Pan Pacific Union here, and so I studied what the Government tourist bureau had done in Japan. They also have an excellent system in Australia. My report on this subject may be obtained from the office of the Pan Pacific Union.

Mr. POWLISON. May I add a word of appreciation to what Doctor Ujihara has said? How many of you saw the exhibition of jujutsu given yesterday at our sports program? That showed us how skillful the Japanese are. Our swimming coach in Honolulu was greatly impressed by his recent visit to Japan, and he spoke in glowing terms

of the ability and hospitality of the Japanese. He drew comparisons which made us feel rather small. For instance, at the swimming meet held in Tokyo more than 5,000 people came, and paid more than $1 each to get in. We think we are doing well here to get 2,000 people to come to a swimming meet. The sport spirit of the Japanese is remarkable. I saw their swimmers here, and their best swimmer started one second late and then passed our best swimmers. One of our leading tennis players here is a girl of Japanese descent; in fact, she is the present women's champion. I should like to answer Mr. Houghton's question as to whether the Japanese like to go out of doors by saying that the Japanese children here are always going on picnics, and greatly enjoy the trips which we make with children from the city playgrounds to various places on the island.

It is our hope that some time we may hold some of the far eastern Olympic games here in Hawaii. We have a natural stadium in the old extinct crater of Punchbowl which would hold thousands of people. Did I understand Doctor Ujihara to say that hygiene is taught in the public schools, and that the Government is making efforts to decrease the death rate, as well as infant mortality?

Doctor UJIHARA. Yes.

Mr. POWLISON. I should like to say a word in appreciation of the local Japanese newspapers and their courtesy in writing letters of thanks for each small service of any kind; their methods seem to me to be superior to ours, which are rather slipshod.

The CHAIRMAN. Did I understand that physical culture has increased the stature of the Japanese people?

Doctor UJIHARA. Yes.

The CHAIRMAN. I think that is quite remarkable. This will be exceedingly interesting to some of our scientists in America.

Mrs. FULLARD-LEO. I believe that this is partly due to a change in their methods of living and adopting western customs, such as the use of chairs. This increase of stature probably could not be applied so successfully in other countries.

The CHAIRMAN. Another point I should like to ask about is the remarkable attendance at track and field meets in Japan. Did I understand you to say that you had 5,000 people at a swimming meet?

Doctor UJIHARA. Yes.

The CHAIRMAN. What methods have you followed in getting people interested in physical education? Has it been accomplished by your Government or are your people naturally inclined that way?

Mrs. FULLARD-LEO. May I answer that question by saying that physical education is compulsory in the schools of Japan. They have taken this question more seriously than any other country in the Pacific, including America.

The CHAIRMAN. Our next speaker was to have been Mr. Pichardo, whose topic, "Cutdoor recreation in Mexico," will have to be postponed until a later meeting of this section on account of his absence.

There are several other subjects for discussion in the time left to us this morning; one of these is the Boy Scout movement. I have been greatly impressed here at seeing Boy Scouts of all nationalities. As Mr. Powlison is so much interested in them, I should be glad to have him introduce the subject.

Mr. POWLISON. The Boy Scout movement is of vital importance to every country—and I include in that the Girl Scouts. In introducing the subject I should like to give some of my personal connections with the Boy Scouts; but I would ask that this not be put down in the record of this meeting.

(Notes not taken.)

The CHAIRMAN. We are all interested in the Boy Scouts. I should like to have some one tell us how this movement originated.

Mrs. FULLARD-LEO. As South Africa is my home, I know how the Boy Scout movement originated there. It was in Rhodesia, where there were few white settlers. During an uprising the men had to go out to fight the blacks, and this left only the boys at home. Sir Baden-Powell, who was the head of an armed organization somewhat like the Canadian Mounted Police, thought it would be a good idea to have the boys organized so that they could deliver messages, etc. This was so successful that the idea spread to other countries, and reached America in 1907. Then the Girl Scouts were organized by the sister of Baden-Powell, and these two organizations have spread all over the world.

I noticed in to-day's paper that crime and the cost of crime are increasing. I also noticed that a judge at the bar and a rabbi in one of our large cities said that never in their experience had they found a boy scout with a criminal record. Therefore, I feel that if we can help along the work of the Boy Scouts we are helping to diminish the crime increase.

The CHAIRMAN. I should like to call on Mr. Russell to tell us about the Boy Scouts in which he is interested.

Mr. RUSSELL. Since my retirement from business in 1920 I have devoted myself to park and recreational activities. About nine years ago I gave an area of 15 acres with buildings near Utica, N. Y., to the Boy Scouts. It is called Camp Russell and is actively operating. Last summer we took care of over 900 boys and this summer we expect to do as well. I have been greatly pleased with the Boy Scout work I have seen here. Any money I can spare will be put in those things which help to decrease crime and are of benefit to the country. I am very glad to hear of all the things you are doing, and it has been of inspiration to me.

The CHAIRMAN. Will Doctor Ujihara tell us about the Boy Scouts in Japan?

Doctor UJIHARA. The central office of the Boy Scout association is in Tokyo, and Viscount Goto is its president. There are over 200,000 scouts.

The CHAIRMAN. I think there are about one and one-half million in America. It is not only the boys who benefit but the scoutmasters as well. It keeps us all boys in spirit. I should like to call upon Mrs. David Olsen to tell us about the Girl Scouts.

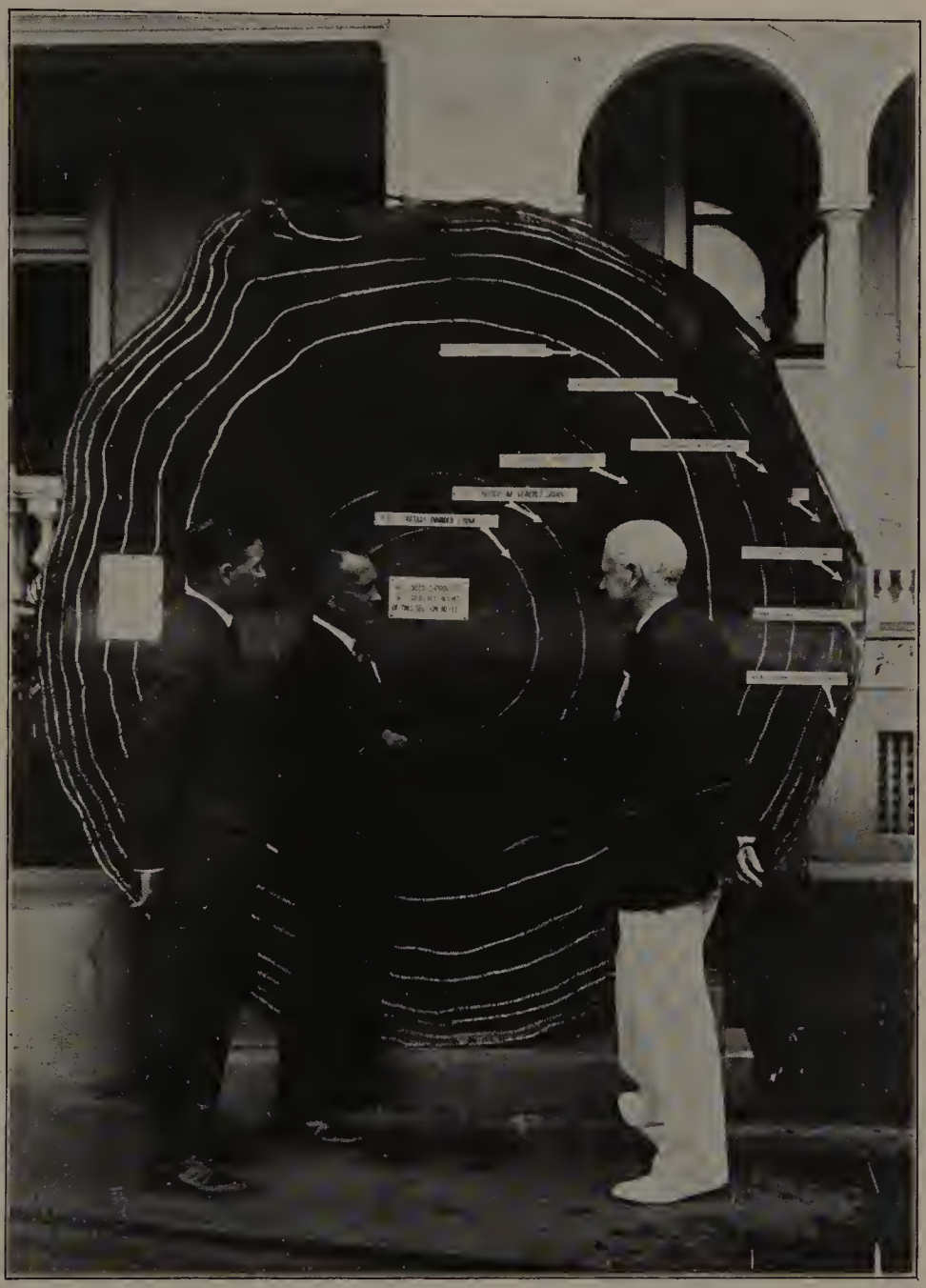
Mrs. OLSEN. You are all familiar with the Girl Scouts and how the organization started from the same source. It was introduced into the United States by Mrs. Low in 1912. In Hawaii, we have chapters on every island. In Honolulu we have an all-Japanese group from the Buddhist center, an all-Chinese group and an all-Hawaiian group and others which are mixtures of all nationalities. Our program is twofold—recreation and training. Examinations are given in different subjects. I want to say that in the seven years that I have been working here I have never asked for anything yet in the name of the Girl Scouts and been refused. Last year the public gave a camp site and house down on the peninsula where we take 75 girls camping at a time. There is a group there now, and if any of you care to go, you will find it very interesting. They are taught sewing, nursing, cooking, etc., and are always willing to do anything of which they are capable. We have different groups of girls according to their interests. We find that the interests vary as the age increases. Our girls have to be 10 years old to join, although we have a younger group called the "Brownies." I want to indorse the sentiment that the work is of great benefit to those who are in it. If you live up to the scout laws it can not help but make a difference in your life,

Mrs. FULLARD-LEO. There is a man here who has had much experience in recreation, Mr. Virgo from Kauai.

The CHAIRMAN. Mr. Virgo, will you say something about your experience?

Mr. VIRGO. Most of you know about the great sugar plantations which raise cane, but we also raise other things. At Makaweli plantation where I live on the island of Kauai we have three athletic fields, where we hold our holiday celebrations. These are completely equipped for baseball, tennis, and other sports of all kinds. There are some 3,000 employees on the plantation, and we try to serve everybody. The Young Men's Christian Association and Young Women's Christian Association also help us out in showing how model homes should be kept. This will give you some idea of how the plantation raises something besides sugar.

The CHAIRMAN. I note that Mr. Thayer is here—a man who has been greatly interested in the Boy Scouts in Hawaii, and I think it would be fitting if Mr. Thayer would tell us something of his ideas on this subject.



CROSS SECTION OF GIANT SEQUOIA, ILLUSTRATING EVENTS IN WORLD HISTORY

Mr. THAYER. I have been scoutmaster now for almost 10 years in Hawaii and I have also observed the Boy Scouts in Japan, China, and New Zealand. Wherever I have gone, I have been tremendously

impressed with the importance of this movement, not only for the present but for the future. After seeing the boys in other countries who were all of one nationality, I realized what a different and difficult problem we had in Hawaii. I believe you will not find the mixture of nationalities anywhere in the world that we have here where we have sometimes as many as seven different races in one troop. Of our largest troop of 130 boys, about 90 per cent are of Japanese parentage. Another troop which is 99 per cent Japanese has a scoutmaster who is a full-blooded Chinese born in Hawaii. In my own troop I have some 6 Hawaiians, 2 Japanese, 4 Portuguese, 1 Filipino, and several Chinese. How can boys of so many nationalities mix together and be strained through the mesh of scouting? My answer to that is that there is no nationality among boys. Until the idea is put into their heads by someone else, usually the parents, boys do not think of nationality. If a boy is a good fellow, or a good athlete, the other boys will like him—they do not care what his race is or who his father was. We try to encourage this idea in scouting. I have no fear that these boys who are going through our scout troups will ever set themselves off to one side and build up a wall against us. They will not. Their desire is to be considered like ourselves as American citizens. The danger is that the other side will mark a line between the American born and the oriental born. If that point is ever reached, we shall have a dangerous situation.

Now the moral of all this is—let us continue the work we are doing with the Boy Scouts. If a boy, or girl, is born here, he or she is a citizen. How to get boys interested in scout work is to show them something interesting to do. One of the easiest ways is to take a piece of rope and tie knots and in about two minutes you have them sold on the idea of scouting. Two years ago I was on a boat going to the Orient and there were some small boys aboard. Their parents were evidently not able to be out and the boys were running the decks and annoying the passengers. So I got a piece of rope and started tieing knots and the others were much interested, and I am sure the passengers had a pleasanter voyage. Show them how to do something with their hands and make the game attractive to them; that is how to get them interested. Then there is something more than what the boys get, and that is what comes to the man who is interested in scouting. I feel younger than I did 10 years ago and my health is better. The Boy Scouts have made me a better man, physically, mentally, and morally.

The CHAIRMAN. We appreciate your having given us the ideals of scouting as you have, Mr. Thayer. Thank you.

Adjournment.

## *Tuesday Afternoon, April 12, 1927*

*Topic: Educational Opportunities in Recreation*

*Stephen T. Mather, Presiding*

The session was called to order at 2 o'clock by the chairman, who said: Since Mr. Hamlin is still unable to be with us, we will proceed with this afternoon's program, which covers specifically the educational opportunities in outdoor recreation. The importance of educational activities of the National Park Service has been growing from year to year, until now we regard them as one of its chief functions, and we look forward toward carrying such development to all of the national parks. This educational development is being administered by our chief naturalist, Mr. Ansel F. Hall, who will now address us.

## *EDUCATIONAL ACTIVITIES IN NATIONAL PARKS*

*By Ansel F. Hall*

*Chief Naturalist, Educational Division of the National Park Service*

With the permission of the chairman, I wish to change my subject somewhat from the one which is listed in our program. With your permission, I should like to broaden this to "Educational opportunities in the out-of-doors" because, as a matter of fact, the educational opportunities which we are discussing this afternoon may be applied not only to national parks, but to any wilderness areas in our own country or any other.

During the past 10 years, the educational program has developed along with the more physical recreation activities in the national parks.

This growth, which has extended over a period of some eight years, had its inception in Yosemite National Park, and I believe that it will interest you to know that it was Mr. Mather himself who started the work with his own private funds. Dr. Harold Bryant and Dr. Loye Holmes Miller conducted trips afield in Yosemite in 1919, and the great interest shown by visitors in birds, trees, flowers, and other

living things along the trail side, demonstrated the marvelous educational opportunity in this work. About the same time, a small museum was being established in Yosemite National Park. These were really the beginnings of the educational activities of the National Park Service.

Before describing our methods, I might briefly attempt to place the educational functions of the national parks in relation to the subject of recreation as a whole. Those of you who were here this morning will remember that I briefly sketched the reasons for setting aside great natural recreation areas with the dual purposes—first, of conserving our natural scenic wonders; and, secondly, of reserving these areas for ourselves and our children. Practically all of our national parks have been set aside to conserve the outstanding scenic assets of our country.

Our national parks have passed through three definite stages of development. First is the stage of preservation, and, as I stated briefly this morning, preservation is not merely confined to setting aside areas, but also to the continual struggle to maintain these areas inviolate against private encroachment. A second period of development is one which I like to call preparation. These great nature wilderness areas are being prepared for you and for our other friends who wish to visit them. Roads are being built, and from the roads trails lead out into the high country—not too many, however, as it is the policy of the park service to reserve large areas in wilderness condition. During this "preparation" period, hotels have been built and other physical improvements which administer to our comforts. The third period, one which we have been entering during the past decade, is a period of highest utilization. I use the word "utilization" as a synonym for conservation, or "making the highest permanent use of an area." The word also is used in its economic sense, but not in any way to imply destruction through use.

A few years ago when we talked about setting aside areas for recreation, we were looked upon as evangelists, preaching. Such wilderness recreation areas were regarded as luxuries, and even to-day some men so consider them. As a matter of fact, however, recreation is economically the most efficient use of these areas, and makes them worth far more to the American public than if these lands were flooded by reservoirs or otherwise used for private exploitation. Even the most prosaic business men are convinced of the necessity of these great natural playgrounds when they are made to realize that these areas bring in much more revenue when used in this manner than they would if privately exploited.

The inestimable benefits derived by our national health can not be measured in dollars and cents; this is intangible but exceedingly important.

Herctofore, much stress has been laid upon the physical side of recreation, but we are now beginning to realize the importance of the mental and spiritual side of recreation, as applied to our parks. You who have stood on high mountains and looked across miles to the magnificent peaks of an unlimited panorama will understand for yourselves something of the message of the open, which I would find difficult to express in words. Finding this "something" is one of the highest uses of our wilderness recreation areas, and I am glad to say that we are now definitely entering the era which I previously termed "highest utilization."

Through its educational division, the National Park Service is endeavoring to help every visitor to enjoy these great areas with an enjoyment based upon understanding. That, if you please, is the keynote of all our educational activities. Call these activities educational, or call them informational, if you like. Our problems are not academic, but largely the problems of simplification—making all facts about these great national areas available in elementary form, so that they may be understood by all.

The principles that have been developed, and the methods which have been used in the national parks, can be applied in any outdoor area, and, therefore, I present the details which have in our experience proven of greatest efficacy in helping the public to understand nature in the field. Among our educational opportunities in the parks we have before us many distinct lines of endeavor which seem to fall naturally into four groups—groups, however, which somewhat overlap:

I. General information activities.
II. Exhibits.
III. Instruction.
IV. Research.

These subjects may be presented more in detail, as follows:

I. INFORMATION

1. Information service:
   (*a*) Information offices maintained by full-time ranger naturalists.
   (*b*) Information offices maintained by regular rangers (usually alternating).
   (*c*) Information substations; visual material (no ranger in charge).
   (*d*) Signs and posters at points of scientific interest, including special "nature trails."
   (*e*) Signs, posters, literature, and announcements telling of educational activities in the park.
   (*f*) Radiobroadcasting.
2. Books and publications:
   (*a*) Park library and branch libraries.
   (*b*) Sale of park publications, both governmental and general.
   (*c*) Publications by educational staff; nature notes, news articles, scientific articles, news items on menus, and other park utility cards.

3. Visual education:
   (*a*) Photographs.
   (*b*) Lantern slides.
   (*c*) Motion pictures.

II. EXHIBITS

4. Museum and branch museums:
   (*a*) Administration.
   (*b*) Building and properties.
   (*c*) Accessions and preparation of exhibits.
   (*d*) Cooperation and extension service.
5. Botanical field exhibits:
   (*a*) Wild flower gardens (including mosses, ferns, lichens, fungæ, etc.).
   (*b*) Arboretum.
   (*c*) Labeling of trees, flowers, etc. in the field.
   (*d*) Cut-flower displays.
6. Animal exhibits:
   (*a*) Wild-life sanctuaries.
   (*b*) Attracting and taming animals (feeding, planting of bird feed, bird baths, etc.).
   (*c*) Mammals in captivity—zoo.
   (*d*) Birds in captivity—aviary.
   (*e*) Reptiles, amphibia, etc.—terrarium; aquarium, fish hatchery, planting of fish.
7. Nature trails.
8. Preservation of sites of educational interest (including restorations).

III. INSTRUCTION

9. Field trips conducted by educational staff:
   (*a*) Nature guided trips (ranger naturalist in charge).
   (*b*) General information trips (regular ranger in charge).
   (*c*) Special guided trips by visiting specialists.
10. Lectures:
   (*a*) Popular lectures by nature guide rangers.
   (*b*) Technical or semitechnical lectures by visiting scientists. (Announcements of lectures and guide trips mentioned under 1 (*e*).
11. Schools of field natural history:
   (*a*) Courses for the training of nature guides.
   (*b*) Courses for the general public.
12. University courses offered in parks.

IV. RESEARCH

13. Research. (Chiefly dependent upon cooperation with visiting specialists.)

The general information activities are exceedingly varied. You may enter one of the parks by automobile, and at the first checking station will meet a ranger whom you will probably find to be a young man some 25 years of age, clean-cut, and anxious to answer courteously any of your questions. One of the prerequisites for the position as ranger is that the applicant must know much about the out-of-doors, and especially about the park which he is helping to administer. When, therefore, we enter a park we meet with the

simplest type of park service educational activities, namely, an information station conducted by a ranger. Quite often one will find a ranger naturalist in charge of a more specialized station, usually at the central headquarters, or at the museum, in the case of a park which has a museum. This man is well qualified to tell visitors about the birds, trees, flowers, or other interesting features of the region, and if he does not know he will look up the information. We are very insistent in the national parks that no misinformation be given; this is one of the first things impressed upon young men entering the service. All information, although in most cases necessarily simple in its presentation, must nevertheless be scientifically accurate.

There are other great possibilities in general information which have not even been touched upon in the parks. One of these is the field for radiobroadcasting. So far, there are no broadcasting stations in the national parks, but during the winter it is often possible to deliver addresses on the national parks and their educational features from regular stations outside the parks. Doctor Mather himself can tell you of the splendid results from sending information over the ether, as exemplified by his address given in Chicago last year. It resulted, I believe, in his receiving at least 100 letters requesting further information. The opportunities for the dispersal of educational information about the parks and other natural areas in this manner is almost unlimited.

Under general information we might also consider books and other publications. In many of the national parks small libraries are being started; books on both technical and popular subjects relating to the parks should be available for the use of the educational staff and visitors particularly interested. A number of these small libraries have already been started, and a research library on all subjects relating to the national parks is being established by private donation in Yosemite and is housed in a new fireproof building.

The educational division of the National Park Service publishes several very interesting wild-life bulletins which are called "Nature Notes." In most parks they are mimeographed, being distributed by mail weekly or monthly to several hundred individuals and newspapers, where they are often copied and thus multiply the results of our efforts. In these Nature Notes, scientific information is presented in words of one syllable, and we find the public intensely interested in wild life, geology, and other natural phenomena of our parks.

Besides Nature Notes, the park service publishes, at cost, popular bulletins on wild life, geology, trees, flowers, and other similar subjects, and during the past winter two such volumes went to press. We hope during the next few years to produce similar publications for all parks. The bulletin "Plants of Glacier National Park," which

we are to-day distributing, will give you a definite idea of the type of popular publication we are producing. More general pamphlets on the national parks are also available and will be distributed at a later meeting.

We may later publish more technical bulletins, but at the present time we feel it our first duty to help the mass of our visitors to understand what is already known about the parks, and, therefore, research will have to be undertaken only after visitors have been given every service with which we can supply them.

Another exceedingly important activity which might be listed under general information is that of visual education through motion-picture films, lantern slides, and other photographs. We can thus reach in an educational way many besides the visitors who come into contact with these activities in our national parks. Not only can we reach far more persons at a very low cost, but also we can reach them during the entire year, even when the parks are closed.

Under "general information activities," I might also mention the subject of "hikers' camps," because I regard the getting of visitors out to where they can meet nature along the trail side as truly an educational function. In some of the national parks it was, until recent years, exceedingly difficult to travel more than one day's walk from the hotel centers. Hiring a pack train was rather too expensive for most visitors, and but few could take advantage of the only other alternative, namely, carrying a 45 or 50 pound knapsack. Now, however, it is possible in some parks to go out into the high country in comfort unencumbered even with personal belongings and at comparatively low cost. Through the High Sierra, in the eastern portion of Yosemite National Park, small mountain camps have been established in a chain 8 to 14 miles (or half a day's walk) apart. One may thus walk from camp to camp, finding accommodations for $1 per night and wholesome meals served for $1 each. In other words, it is at last made possible for persons who really wish to go outdoors and become acquainted with nature first hand to go up into the high country. The high mountain chalets in Glacier National Park also make it possible for our visitors to leave the congested tourist centers, and we look forward to similar trail development in our other wilderness parks.

A number of types of work are included in the educational activities having to do with exhibits. Most important of these is the establishment and maintenance of park museums, which will be exceedingly important in developing recreational areas. We look forward to having a central museum in each national park. These museums will differ greatly from the larger institutions, such as the National Museum, and the American Museum of Natural History; the latter might be called great storehouses for scientific material.

The function of the museum in the national park is to act as a key to the big museum, which is the park itself, and therefore our museums will probably always be limited in size. In these small buildings the general story of that region will be simply told and the visitor will fill in the details with facts discovered in place—out of doors.

It might be of interest to describe briefly the Yosemite Museum, in order that this may be used as an example to demonstrate the principles followed in the establishment of such museums in the parks. Stepping through the main entrance the visitor finds himself in a foyer devoted to the topography of the park; and it is here that he may examine relief maps of the State, the entire area of the park (more than 1,100 square miles), and in detail Yosemite Valley itself. Other maps and pictures further help him to become oriented as an introduction to the region in which he finds himself.

The visitor then steps into the geology room, where, instead of being confronted with a confusing multitude of specimens, he sees at first four relief models, a series showing the geological development of Yosemite Valley in the following stages: (1) Uplift of the Sierra Nevada Range; (2) the glacial invasion of the park; (3) a large relief of Yosemite Valley showing the retreat of the glaciers; and (4) Yosemite Valley as it is to-day. This gives a brief but comprehensive outline of Yosemite's remarkably interesting geology, and the models are used several times daily by lecturers, who give more detailed facts about the geology as crowds call for this information.

From the geology room one steps into the natural history room. Only five comparatively small natural history groups have been attempted, and the function of these is not merely to present to visitors a glimpse of a few mounted animals but, instead, to demonstrate how the birds, flowers, mammals, and trees of the region live together in natural communities, in what are called life zones occurring at very definite levels one above the other. The Upper Sonoran, Transition, Canadian, Hudsonian, and Alpine Arctic zones are thus pictured in five groups, a number of plants and animals being shown living together as a community in each.

The ethnology room is next in the circuit, and introduces the visitor to the people who inhabited this region before the coming of the white men. In this room are exhibited only materials which help to tell the story of the customs and daily life of the Yosemite tribe and demonstrate the excellence of their one art, that of basket making.

The history room, last of the circuit, seems to hold the visitors longer than any other type of exhibit. The historical material exhibited is arranged here so that it tells a consecutive story, beginning with the early Spanish conquests and carrying the visitor through successive periods of exploration, migration, discovery of gold, and

finally to the discovery of Yosemite Valley. The local history is then, in an interesting way, brought up to the present time. Much attention was paid to the careful preparation of labels and elimination of needless exhibits, so that each article, with its description, forms a definite part of the story of Yosemite. After spending half an hour or less in making this circuit our Yosemite visitors have a logical conception of the park as a whole, and are prepared to look upon other facts regarding the park each in its proper perspective.

The importance of branch museums should also be stressed. We find it exceedingly important to preserve natural features in place. We find that the educational appeal of exhibits preserved in place is far greater than that of exhibits transported to a museum; therefore, in all probability, a number of small branch museums will eventually



MODEL: YOSEMITE NATIONAL PARK (GLACIER POINT LOOKOUT AND HALF DOME)

be found in the parks at points of educational interest. A number of these have already been constructed. In Yosemite National Park there is Glacier Point Lookout, a branch of the Yosemite Museum. This small granite building is equipped with a powerful binocular telescope which brings the peaks of the High Sierra, which are 20 miles distant, to within half a mile of the observer. Here the ranger naturalist on duty can tell the geological story of the Yosemite region, using the valley itself for demonstration, and reaching out with his telescope for distant facts hidden to the naked eye.

At Grand Canyon another small branch museum is being erected, and here again is a splendid opportunity for telling the geological story, a story which in this case begins millions of years before that of Yosemite.

Old Faithful ranger station in Yellowstone Park is now being used as a branch museum. The exhibits here are limited to those which tell the story of thermal action.

More detailed geological features will also be utilized as local exhibits.

The development of the famous falcial pot holes at the Glacier Garden in Lucerne, Switzerland, is an example of what can be done in making such natural features instructive. These, and similar geological details, can be pointed out in many of our national parks.

In Switzerland, also, are very famous wild-flower gardens, which offer another possibility as one of the educational activities in wilderness areas. Already there has been started a cactus garden in Zion National Park and wild-flower gardens in Yellowstone and Yosemite. Exhibits of cut wild flowers are on display in almost all national parks throughout the season.

Some visitors to the national parks ask why the wild animals can not be seen. The answer is that they do not like the dust, gasoline smoke, and noise of the highways. Not everyone is fortunate enough to be able to travel forest trails, and therefore it may be advisable in some parks to keep a few wild animals where they can be seen, provided this can be accomplished without making it appear that they are caged. I like the type of animal inclosure developed in the zoological gardens in Berlin and in Cairo, Egypt. In these the observer is protected by the animals being on the far side of a deep pit, while at the same time it appears that they are in their natural surroundings, entirely without barriers. If animals are to be exhibited in the parks, they might be shown in this manner; but I feel that they should not be caged.

Another educational activity which utilizes exhibits in their natural habitat is the establishment and maintenance of nature trails. This efficient way of helping our public to become acquainted with the trees, birds, flowers, and other natural features of the trailside had its origin under Doctor Lutz, in Palisades Interstate Park, some two or three years ago. Near the beginning of each nature trail is a sign, somewhat like that at the starting point of the first trail in Palisades Park, which reads "A friend who knows something of natural history is walking with you and will be glad to help you to become acquainted with the wild things along the trailside." Features of interest are labeled, not merely with their names but in such a manner that the visitor's attention is attracted and he is stimulated to discover facts for himself. By establishing similiar trails in several of our national parks we found that the novelty of discovering for themselves the natural features of the trailside greatly appeals to our guests, and I look forward to the development of nature trails as one of the most

efficient educational features of our parks. To-morrow I shall show you photographs of our nature trails and tell you more of the details of how they have been established.

The third type of educational activities in the national parks is concerned with personal instruction. A few moments ago I told you how Mr. Mather personally established nature guiding activities in Yosemite during the season of 1919. Since then park naturalists (educational officers who serve during the entire year) have been appointed for a number of the national parks, and during the summer season ranger naturalists or ranger guides are employed in almost all the parks. These temporary positions are filled, for the most part, by university instructors who serve during the vacation period. We attempt to secure the services of men competent to indentify the birds, flowers, and geological features of each park in a simple way that will both interest and instruct our visitors. Of course, we are particularly careful to secure the services of specialists where unique natural features are the chief source of interest. In the geyser basin of Yellowstone, for example, our ranger naturalists are trained geologists; likewise at Grand Canyon. In Yosemite, however, with its many natural history features, we aim to have specialists in botany, zoology, and geology upon our educational staff.

In several of the larger parks, namely, Yellowstone, Yosemite, Mount Rainier, and Grand Canyon, permanent educational officers are employed by the park service. Eventually there will be one of these park naturalists in each of the national parks. You might be interested to know something of the necessary qualifications of these men who administer our educational activities. All of them are university graduates, and besides a degree in science they must have had general training in geology, zoology, and botany. For the position of park naturalist there are three main qualifications—two of them personal and one technical. The park naturalist must first have an understanding of the visiting public with whom he is working and the ability to interpret scientific facts so that they can be understood by everyone. This also includes the delivery of lectures to audiences as great as 1,000, and even 1,500. Secondly, the park naturalist must have the executive ability which will enable him to efficiently organize both his own work and that of his staff. Thirdly, the park naturalist must have a fundamental knowledge of all sciences, as well as special knowledge of the scientific features of his particular park. One of his chief duties is to coordinate the various sciences so that the exhibits, general information, and instruction will be presented in such a manner that the park will always express its own individuality.

This matter of each park expressing its own individuality is one which we believe should be especially stressed in the national parks,

each of which contains at least one supreme example of some great natural feature. For example, a knowledge of the prehistoric peoples of Mesa Verde forms the keynote to the enjoyment of the marvelous ruins left by three successive civilizations in that intensely interesting park. Grand Canyon also presents a special opportunity of telling the geological story of the earth from the beginning of time to the present, each chapter in the history of the earth lying traced in the rocks before the visitors' eyes and awaiting the interpretation of the ranger naturalist.

In conducting trips afield our ranger naturalists have two distinct methods of reaching their visitors, and these methods of approach depend chiefly upon personal qualifications. A few believe that it is our duty to tell as many facts as possible, and therefore take particular pains to identify almost every tree, flower, and bird encountered. Others have taken as their motto the old saying "To be nature minded is better than to be nature wise," and feel that it is more important that the visitor carry away with him an intense enjoyment of what he has seen, even though he may not have accumulated as many facts as would have been given him under the other method of instruction. We believe that this latter—the project method—not only gives the visitor intense enjoyment while he is becoming acquainted with the out of doors, but also stimulates him to continue his interest long after he has left the park. We consider these field trips merely an introduction to the great possibilities of enjoyment in knowing the out of doors and hope that they will lead our guests to seek more of this type of enjoyment, whether it be in the national parks or in the other wild recreation areas of our country.

Besides the shorter trips afield, which usually occupy from one to three hours, we offer, in several parks, full-day walks from 8 to 15 miles. In many places, such as Yosemite Valley and Sequoia, this takes the party through several successive life zones, and acts as a splendid natural history demonstration trip.

In one park, again Yosemite, we have extended the guiding service to longer trips. Here walking parties are conducted over an eight-day circuit, overnight stops being made at the hikers' camps. Each week 20 persons are thus introduced to the wilderness areas of the High Sierra.

Lectures on natural history features are given under a variety of conditions in practically all of the national parks; usually these are given before the camp fire at the nightly gathering at a hotel, camp, or lodge. Normally, a ranger naturalist will thus reach from 1 to 300 persons, but occasionally, at the larger tourist centers, these popular addresses will be delivered to as many as 2,000 listeners. These short lectures are given a place on the programs of hotels and

camps, and therefore must be made exceedingly terse and interesting in order to compare favorably with the other types of entertainment offered. Needless to say, the information thus given on natural history subjects must be scientifically accurate as well as interesting.

More technical lectures are delivered by scientists in some of the national parks through the cooperation of private individuals and institutions. For example, the Le Conte memorial lectures, a series of three lectures each on four subjects, are delivered each year in Yosemite National Park, under the auspices of the University of California, in memory of the greatly loved geologist, Joseph Le Conte. We look forward to similar lectures on natural history subjects being permanently established in other parks. Occasionally individual scientific lectures are delivered in the parks by visiting scientists who are usually exceedingly generous in cooperating with our educational staff.

Some three or four years ago it became apparent that with the rapidly developing educational activities in the parks, it would soon become difficult to recruit all of the instructors necessary to fill ranger naturalist positions. It was, therefore, decided that we would attempt to train young men who already had basic qualifications in the sciences, and who were interested in conducting instruction in the field. The Yosemite Field School of Natural History was therefore established at the Yosemite Museum, and a seven weeks' course of training offered to 20 individuals. Two years at a qualified university were required as a prerequisite to registration in this course. The training offered covers all of the natural sciences exemplified in the park, beginning with astronomy, geology, and meteorology, and in turn, each other phase of natural history. At least half of each day during the first six weeks was spent in the field, and at the end of this time the students were qualified to identify practically all birds, flowers, and trees, and had a good working knowledge of the geology of the region. An eight-day walk through the High Sierra completed the course, giving at the same time extremely valuable field knowledge of life zones and high-mountain natural history features. The enthusiasm of the students, and their great progress in field identification, more than justified the establishment of the Yosemite Field School of Natural History, but in one way we were disappointed. We had prepared these men and women to serve as nature guides, but found that other institutions—Boy Scout camps, municipal camps, Camp Fire Girls, etc.—wanted their services as much as we did, and therefore all of them were employed elsewhere.

This year we were more fortunate in securing the services of some of these individuals whom we helped to train. Even though none of them served in the park service, however, the course would be more

than justified, inasmuch as it spreads the nature-study idea and results in the broadcasting of our work to other areas far outside the national parks. So successful, indeed, is the Yosemite Field School of Natural History, that this year, without in any way advertising the fact that such instruction was being offered, we had more than 60 applications for instruction nine months before the course was to begin, and I believe by this time Park Naturalist Russell must have received well over 100 registration inquiries.

The national parks also serve as outdoor laboratories, where instruction may be offered to great advantage by universities and other educational institutions. The University of California has several times held its summer school in entomology in Yosemite National Park. A number of institutions use the parks as geological demonstration areas. Only last season I met a party from the geological department of Kansas University, studying in Yellowstone. Then, also, there has been even further development along similar lines in the organization by Princeton University of a field school of geology. Traveling in a specially constructed Pullman coach, 20 students visited the outstanding geological features of our country, stopping for study in Glacier, Yellowstone, Rainier, Crater Lake, Yosemite, and Grand Canyon National Parks. I look forward to the far greater utilization of the parks in this manner.

Set aside from the other three more general classes of educational activities in the national parks is the highly important matter of research. The national parks offer ideal conditions for the studies of tremendous problems in geophysics, geology, zoology, and botany, and it is conceivable that there will some day be established research laboratories in many of the national parks which will be the headquarters for scientific study in these great areas. At present, we have no funds available for scientific research, and it is possible that the Park Service may never enter this field to any great extent. Fortunately, however, there are many great national research institutions that will undertake research problems in the parks, each institution working out the problems in its own individual field. I feel that it is the function of the educational division, first to make an inventory of our scientific problems, and secondly to correlate the research activities of private individuals and organizations in the national parks.

This matter of an inventory of our scientific problems is by no means a simple one. Last summer I sat with Doctor Conard, our chief ranger naturalist of Yellowstone National Park, and in one-half hour we listed more than 40 unsolved problems, most of them geological, and most of them of major importance. We will have to rely upon private help in making this inventory, but I believe that it is exceedingly important.

Pursuing the same idea, it is also exceedingly important that we have in the parks an inventory or check list of all our scientific assets—geological, botanical, and zoological. This, as you will see, is a stupendous problem, and can only be worked out over a series of years, with the cooperation of as many authorities as can be prevailed upon to assist in the project. We are even now progressing, however, toward this ultimate goal, and I might point with pride to the splendid volume recently issued by the University of California on the animal life of Yosemite, as well as numerous technical publications of many departments of our Government on the geology, archeology, and other scientific features of our parks. What has been done, however, is simply a beginning, and I believe it is vitally necessary to keep in mind the ultimate goal of eventually summarizing the facts regarding all our scientific features.

In conclusion, let me say again, that I see as the chief function of the educational division of the National Park Service, the correlation of the various lines of educational endeavor, which I have briefly mentioned, together with the possibilities of reducing published scientific material to simple terms, which will make these great wild areas of our country enjoyable to visitors through greater understanding.

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*Discussion*

The Chairman. Dr. Chester Brown has visited several of the national parks, and I am sure that he will have some further interesting ideas as to their educational possibilities.

Doctor Brown. I wish to congratulate Mr. Hall on being able to present so much material in such a condensed form. I realize somewhat what an undertaking it is, and I think he has accomplished a great deal in the short space allotted for his address.

In my profession we deal with preventative medicine. This consists largely in making use of the opportunity to educate man to enjoy his surroundings; for you know, man is after all simply an educated animal conscious of his existence. He sees that he is in a created atmosphere and, therefore, his normal tendency is to study the problems of creation. In so doing, he has the opportunity of repairing the machine of his own physical body through recreation.

The term "education" seems offensive to certain individuals, but I am sure that if they meet with it under the many names mentioned by Mr. Hall in his address, they will find it educational recreation, rather than in any way relating to their old idea of education as schooling.

I wish to say that I have seen the work of the educational division function in Yellowstone National Park, and greatly admire not only

the way in which the ranger naturalists present scientific facts so that everyone may understand them, but also the way that they have of instilling visitors with a love for the park and with things out of doors.

The CHAIRMAN. Since we have undertaken educational service in the parks, we have received in Washington great numbers of letters from visitors, commending the services that have been available to them, which helped them to enjoy their vacations more. This love of the things of the open exists in high places as well as low. For example, the Crown Prince of Sweden, during his recent visit to this country, took an intense interest in the educational phases of our parks, especially in botany. Indeed, after Mr. Albright and I answered a few of his many questions, we sent posthaste for our chief nature guide, Doctor Conard, who is a botanist, and he delighted the prince during his entire visit by discussing the wild flowers and other natural history features of the Yellowstone. He was so interested, in fact, that he took back specimens of plants and seeds to his own country, and I must say that this educational service in our parks helped him to gain a splendid impression of what we are doing in this country.

Mr. JUDD. If you will permit me, Mr. Chairman, I wish to testify further to the value of the educational activities in the national parks. Two years ago, when I visited Glacier National Park, the first thing that came to my attention was a splendid exhibit of labeled wild flowers at Many Glacier Hotel. Here, and in many other tourist centers, I found that similar displays were attracting a great deal of attention among visitors, many of whom were to be seen at almost any time, making memoranda which would enable them to identify similar flowers in the field.

Then, too, I rode over the summit of the mountains to Granite Park, seeing mountain sheep, goats, and other wild life including deer and bear, when we again descended through the woods toward Lake McDonald.

Everywhere in Glacier it was apparent that, although all of the educational activities mentioned by Mr. Hall are not as yet carried on, the Park Service is nevertheless making every possible provision to help visitors to enjoy the natural features of the park.

Mr. HOUGHTON. I should like to ask Mr. Hall if the interest of visitors has increased with instruction.

Mr. HALL. To that question I can definitely answer, yes. Eight years ago when out-door education was first started in the national parks, we found that it was a new idea to most visitors. In other words—if you will pardon the use of slang—we had to "sell" the idea of learning about nature first hand. We soon found that the little groups taken into the field by our nature guides increased in size until it was necessary to add several other ranger naturalists

to our staff. Now, at the end of several years, the demand for field trips, lectures, and other educational service is so great that we can scarcely fill it. We have found by experience that a group of 20 is the ideal number for a ranger naturalist to accompany in the field; 30 may possibly be served on one expedition, but if the number is greater the information given by the guide is so attenuated that it greatly loses in value to the individual. As an example of how great is the demand for field information, I might tell you of stopping last summer at Old Faithful in Yellowstone National Park, where I met a ranger naturalist at the time of his trip over the formations; I found that, instead of 20 or 30 persons, 249 individuals had gathered. Perhaps, Doctor Brown, this will in some way answer your question.

Mr. BOARDMAN. I wish, Mr. Chairman, to further express appreciation of what Mr. Hall has said, and say that from his address I am carrying home with me to Australia many interesting facts and ideas, which may be applied with profit in our own parks.

Mr. Hall spoke of the simplification of scientific data for visitors, but I wish at this point to suggest that the Latin names be also used, chiefly as a bond of unity, for whatever the visitors' language may be, these names always remain the same.

I desire, also, to verify Mr. Hall's statements regarding the exhibit of animals. We have in the Sydney Zoo just such animal inclosures as Mr. Hall described having seen in Cairo and other zoological gardens. These inclosures provide attractive living conditions for the animals, besides giving an intensely naturalistic look to the surroundings.

In our country we are carrying on a few educational activities which I believe might be of interest at this time. Mr. Hall spoke of a special car being built for the use of students in studying geology in the national parks. In Australia the Government maintains a special train of 20 railroad cars, which acts as a traveling demonstration institution, being shipped from place to place in the country districts for instruction in agriculture. This idea might also be applied to other subjects relating to the out-of-doors.

In connection with Mr. Hall's description of the work of ranger naturalists, let me heartily commend his statement that "To be nature minded is better than to be nature wise." In our country we hold that the enthusiastic beginner of to-day is our specialist of to-morrow. In order to stimulate interest in the out-of-doors, we have instituted what we call "Garden Week," and we plan next year to hold a national wild-flower show. Horticultural scholarships also have been established, and by providing incentive for personal study, are having a great influence on our out-of-doors education.

The CHAIRMAN. We are indeed glad to hear from Mr. Boardman.

Doctor MIYOSHI. In Japan we have a number of natural reserves which have been set aside for scientific study. This is one feature which I believe could be introduced, with profit, into other countries, as we have found it of immense value. We find it very important to repeat investigations on these areas every few years, let us say, at periods five to eight years apart, in order to have a definite scientific record of the areas.

The CHAIRMAN. Another educational medium of great possibilities, one which we have introduced to some extent in the parks, but which has vastly broader application, is that of the museum. It gives me great pleasure at this time, to introduce Mr. Edwin H. Bryan, jr., curator of collections, of the Bishop Museum.

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## *THE MUSEUM: AN EDUCATIONAL AND RECREATIONAL MEDIUM*

*By Edwin H. Bryan, jr.*

*Curator of Collections, Bishop Museum, Honolulu, Hawaii*

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The whole idea of a museum, what it should be and what it should do, has undergone a profound change during the last generation or so. As John Cotton Dana, the well-known student of museums, puts it, "the old museum is giving way to the new museum."

The object of the old museum, in so far as it had one, was to be a show place for curiosities. Its main desire was "the acquisition of rare and unique objects with which to fill rows of cold and costly cases."

The new museum, on the other hand, has a fivefold mission to fulfill: To collect, to preserve, to study, to educate, and to entertain. The modern museum might well become a scientific, educational, and recreational clearing house for the community.

Let us briefly consider this list of endeavors of the up-to-date museum. First, to collect. What should it collect and how? In the first place a museum should try to select a definite field and scope, broad or narrow, depending on its situation and resources. It is better to depict or cover a limited area well, than to have an unrelated smattering of objects from everywhere.

There are many kinds of museums. The art museum has a field all its own, and I am not including it in this discussion, although it is perhaps the highest type of educational and recreational medium. It is the scientific, commercial, and historical museums which are included in these remarks. The local museum of limited funds should largely confine itself to objects and features of local interest. The university museum should depict and illustrate the subjects

taught by the institution. The Bishop Museum, for example, has chosen Polynesia for its field, and ethnology and natural history for its scope.

Of the methods of collecting, only one need be touched on at this time. Of course, a museum acquires material and information by expeditions, by collectors, and by exchange with other institutions. But the source which is of most interest to you is the museum's contact with the amateurs throughout its field. The live museum should be as a home to the amateurs of the community. It should be a center for scientific and educational meetings; if not physically so, at least it should encourage and sponsor such meetings. When it has done this, and has made contact with every live student of nature within its field, it will have no further worry about collecting, except to care for the wealth of material which will come in.

This leads to the subject of preservation. The ancient carved bowl or artifact, which is used as a pig trough or a door stop, is not likely to be preserved for future generations to admire or study. It is up to the museum to secure these specimens and to keep them safe. Protection and accessibility are the keynotes of this phase of museum work. The old museum had everything on exhibition. The new museum has as much or more space simply for the storage of specimens. Students have found that much more satisfactory and accurate results may be had from studying objects in quantity. The comparison of a long series of specimens will lead to more accurate and adequate knowledge than will the more intensive study of a few. The modern museum tries to keep series of related objects in fireproof and insectproof rooms, so arranged that they may easily and readily be consulted by students and specialists.

The study phase of a museum's program has a direct bearing in all the others. The museum should collect and be a storehouse for only those objects from which something can be learned. As something can be learned from nearly everything this does not hamper the collector. The study of objects rather acts as an added stimulus to collecting, and points out what is most desired. The results of surveys, explorations, original investigations—in brief, all forms of creative study—are of great value to education. They form the basis of textbooks, popular guidebooks, lectures, magazine articles, and other forms of popular education.

The main requisites for study are material, accommodation, and publication. All three can and should be supplied by the modern museum. Adequate space should be planned in a museum building for laboratories and study rooms. The results of research and study should also be published in some form which may be readily furnished to other workers and institutions.

The museum has a large place to fill in the field of education. Museum authorities used to try to make themselves believe that most persons are serious minded, and that the bulk of them come to a museum to learn something. They do not! Perhaps 90 per cent come to be entertained. Some come because it is a popular place to go. They want to know, "How long will it take us to do the museum?" But the prospect of imparting systematic information to the other 10 per cent is more than worth all the effort of arranging and labeling the specimens. The labeling is no small item in a museum exhibit. You have, no doubt, heard the oft-repeated statement of Dr. Brown Goode, that "a museum is a well-arranged collection of labels, illustrated by specimens." The labels should be such that each exhibit tells its own story. Guides should not be necessary in a modern museum. It is nearly impossible to arrange an entire museum in such a way that it will tell a continuous story, because each subject has so many aspects, and no two persons have exactly the same point of view. But each exhibit can be so arranged as to impress a definite fact upon the mind of the visitor.

Is the educational value of a museum lost on the casual visitor, who comes primarily to be entertained? No, indeed, if the exhibits are planned with sufficient skill. The whole secret of success in this line is to have the material and labels so arranged that they tell a story to everyone, without their being aware of the fact. People like to discover things for themselves. If a fact is too obvious, they lose interest in it. There is too much secondhand information in modern education; not enough direct observation. People hear of things but never see them. It is up to the museum to bring these people face to face with nature; to give them the inspiration which comes from discovering facts for themselves.

A good educational exhibit needs the same elements as a good story: Something to attract the attention, something to hold the interest, and something to convey the message—to "put the subject across." The curator of a modern museum should try to develop these principles. Here and there throughout the halls he should put some striking or unusual objects to catch the attention. Around these he should arrange the material which tells the story—perhaps against an indifferent background of material of interest to the student. The interest of the casual visitor is momentarily attracted; he gets the thrill necessary to be entertained, and, if a responsive spark is struck, other material is at hand to tell more of the story. Here lies the museum's educational opportunity in recreation.

People are always eager for new knowledge. At least a part of a museum should be used for the exhibition of new subjects under investigation. The museum should be constantly growing and expanding. A finished museum is a dead museum.

The popularization of science is often overdone, and intelligibility is obtained at the price of accuracy. An educational exhibit should never exaggerate facts to gain an effect. It should avoid giving the impression of completeness. It should rather give the impression of introducing the visitor to a subject concerning which there is vastly more to be learned. It should awaken his interest and arouse the desire to want to know more. There should be nothing in an exhibit to distract attention from the subject, such as mechanical excellence or conspicuous cases.

The museum can serve to educate in many other ways. In some cities the school children may be brought to see the exhibits. In other communities suitable exhibits may be taken to the schools. Traveling exhibits, pictures, lectures, lantern slides, handbooks and the like all help the museum to serve the student. The exhibits should have something to tell every grade of student from the kindergarten to the university. As the museum halls are frequently not a favorable place to obtain concentration, it might be well to have available other rooms and laboratories where classes and groups of students could examine material and be shown various phases of natural history. Close cooperation between museum and educational institutions is of mutual advantage. The museum furnishes illustrative material, the school produces future workers.

Finally, and perhaps of most importance, as it is of benefit to the greatest number, we have the element of healthy recreation. If the casual visitor receives the necessary emotional excitement, produced by his having admired and having been impressed, the museum will have fulfilled its function of entertaining. If recreation is the useful and enjoyable employment of one's leisure time, then the modern museum, with its educational opportunities and its uplifting and restful surroundings, is a large factor in any program of education and recreation.

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The CHAIRMAN. Thank you, Mr. Bryan, for your excellent address. If there are no further comments, we will adjourn until to-morrow morning.

Mr. BRYAN. Mr. Chairman, may I add, please, an invitation for all delegates to visit the museum at any time during their stay in Honolulu. I should be glad to personally conduct them through the building whenever it is possible for them to come.

The CHAIRMAN. It may be that a number of us could visit the museum some time on Friday.

Adjournment.

## *Wednesday Morning, April 13, 1927*

*Topic: "Recreation and the Conservation of Natural Areas"*

*Ansel F. Hall, Presiding*

The session was called to order at 9 o'clock by the chairman, who said: I wish to announce a change in the program. We have listed two sections for this morning's meeting, first, "Recreation and the conservation of natural areas," and, second, "The conservation of natural areas for scientific study." It now seems advisable to devote the entire morning to the first section and this afternoon we will cover the second half of the program, with Doctor Miyoshi, of Japan, presiding.

Yesterday we learned that the setting aside of recreation areas was actuated chiefly by conservation motives, and by "conservation" I do not mean "locking up." I like to think of conservation as meaning the greatest permanent use of any area. I gives me great pleasure to call upon Mr. Houghton, who will address us on "Wild-life conservation."

## *WILD-LIFE CONSERVATION WITH RELATION TO RECREATION*

*By A. S. Houghton*

*National Game Protective League*

I appear here as a delegate from the Camp Fire Club of America. This club may be said to be a group of paradoxes; one must have killed big game in order to be a member and yet the club is known for its work on conservation. The insignia of this club is the head and horns of a Rocky Mountain sheep, the "blue ribbon" of trophies, with, underneath, a camp fire and suspended boiling kettle. In 1909, deciding that the hunter who kills should also do something to replace what he kills in order that the sport of hunting might be continued and that our wild life might not become extinct, Dr William Hornaday formed a Camp Fire Committee on Forestry and Wild Life. It is as a member of that committee and a delegate from the Camp Fire Club that I am here.

I was interested in Mr. Hall's definition of conservation. I think it should be defined as the wisest use of our natural resources. With relation to wild-life conservation and its relation to recreation, I must point out the importance of setting aside large areas in their natural state. The preservation of wild life does not refer to wild life alone, but to the conditions under which wild life can be protected. It refers to our forests, parks, and general outdoor domain. Without forests and parks, National or State, you can not have wild life and you can not hope to protect it. It is of the greatest importance when seeking to preserve wild life that you have a habitat for it, and under conditions obtaining in the United States it seems to me that the greatest opportunity for the conservation of wild life is in the State and National parks.

That conservation is closely related to recreation there can be no doubt. Conservation some years ago received the judicial commendation of the highest court of the State of New York, when the court of appeals, in affirming the conviction of a game law violator, spoke of the need of game protection so that game might be perpetuated and man might have the enjoyment of the chase with its resulting health-giving benefits.

It was my good fortune, some years ago, to serve in the New York State Conservation Commission when Mr. George D. Pratt was commissioner. One of the first surveys made by Commissioner Pratt was upon the causes of game-law violations. Early in the survey it was manifested that ignorance was in many instances the cause—not ignorance of the laws—but ignorance of the relation of wild life conservation to the better and continued enjoyment of the outdoors, whether it be in hunting or fishing, or in the now somewhat obsolete pleasure of tramping or hiking, or in the photographing of wild life, or in the enjoyment of the forests and the wild flowers in the woods and along the byways.

The commission, upon making this finding, immediately began a campaign of education, by leaflets, colored posters, and eventually by a magazine published by the department. Funds were finally appropriated for this purpose. Only those who have to look for appropriations to our legislatures, both Federal and State, can appreciate what a conquest in education has been accomplished.

As one looks back over the past 15 or 20 years, one can not but be assured that the improvement—there has been improvement—is due not alone to the fear of punishment, which is one of the causes for man's action or nonaction, but to the fact that the people have, through education, come to realize that the inheritance of the wild life and flowers is theirs so to enjoy but not to destroy, that those who come after may have the same enjoyment therefrom. The people are now convinced, as they never before have been, that by

such protection, better opportunities for enjoyment will be afforded them and their children. They are now giving serious thought to the best way to conserve.

Those of you who attended the conference on outdoor recreation, called by President Coolidge in 1924, can not have failed to appreciate the great interest manifested throughout the country in the question of outdoor recreation. Had such a conference been called in 1915 or even in 1920, it is doubtful whether such a representative gathering could have been brought together on such a subject as outdoor recreation. The calling of this Pan Pacific Conference and the representation here from so many nations are proof of the increasing world-wide interest in this subject.

Now let me ask you "What is recreation?" Its literal meaning is re-creating—re-creating the tissues of the body, so that one may be sound in body and sound in mind. Without a sound body and a sound mind we can not have a good citizen. And that in the last analysis is what this recreation movement is seeking to attain.

Another question: "How can recreation best be encouraged and the opportunity to enjoy it be within the reach of all?" This can be accomplished by conserving our parks, National, State, and communal, and by creating more parks and natural reserves—but only where there be some justification. Even recreation might be carried to excess. For example, in one of the States there is a slogan—"A park every mile." These parks should be refuges for wild game, like the sanctuaries of old, where they can not be killed or disturbed and where they may breed.

Hunting as a pastime is becoming so expensive that many who were formerly hunters with the gun are now hunters with the camera. Many who never hunted have gone into the great outdoors to photograph. If our wild life disappears, the opportunity to photograph is gone and the opportunity for outdoor recreation will be curtailed. Now, a word of caution as to our parks. Parks are not to be considered in the language of the exploiter, but rather in the language of the individual who there finds rest and health. In the language of the exploiter, Central Park in the City of New York, which contains approximately 1,200 acres, would be spoken of in terms of the hundreds of millions of dollars that it is worth as unimproved land, but as a recreation center for the crowded homes in that city there is no language in which to express its value. No man would dare to suggest its conversion into building lots. To the same degree are our State and National parks valuable, but from one aspect of greater value because of the opportunities to congregate in them for greater numbers from more sections of the country and of the world. The interest of these great numbers centers largely around the wild life, without which these areas would be much less attractive. In the

Palisades Interstate Park, which is partly in the State of New York and partly in the State of New Jersey, during the past two or three years over 5,000,000 men, women, and children annually have found found rest and pleasure. And this park is less than 20 years old. How much of an education in conservation and recreation this park has been to the community only those know who have followed the work carried on under its superintendent, Maj. William A. Welch.

And so we come back to the subject under discussion—wild-life conservation with relation to recreation. In order to provide recreation there must be conservation—conservation of the fauna, conservation of the flora, conservation of our national and natural scenic places, of our forests, and of our streams. Before recreation comes conservation and before conservation can be attained the people must be educated. Let each of the representatives here ask himself this question: "What is my country doing to educate its people?"

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*Discussion*

The CHAIRMAN. We have greatly enjoyed Mr. Houghton's address on this very interesting subject. This matter of conservation is becoming more important in our forests, national parks, and wilderness areas. We have found this out especially during the past decade, and the foresters have come to take a different viewpoint in this matter. But this is not a national-park meeting, but deals with all phases of recreation. I would appreciate anyone here giving some other viewpoint. Will Mr. Judd tell us something about this subject in Hawaii?

Mr. JUDD. Up to 11 years ago I was connected with the forest service in Oregon and Washington. At that time the foresters did not care whether tourists got into the forest or not; as a matter of fact, they regarded them as an incendiary danger and would rather they did not come. But I noticed a great change when I visited in Oregon and Washington recently. I think the automobile has been largely responsible, and leading up to this was the aid given in building good roads and camp facilities. But besides this there is still a desire to retain large natural areas so that those who prefer to go on foot can get into the wilderness.

It may be of interest to you to know how this situation exists in the Territory of Hawaii. As this is a semitropical climate, fully one-half of the population obtain their recreation at the seashore. Many residents here have a beach home, a mountain home, and a country home, although some of us have to combine them all. We have to protect our forests, not to produce timber but to conserve our water supply. According to the law establishing the forestry work here,

it is the duty of the board of agriculture "to devise ways and means of protecting, extending, increasing, and utilizing the forests and forest reserves, more particularly for developing the streams and sources of water supply so as to make such water available for use." Our population here will be limited to the amount of water available in the Territory. Sugar is raised only because we are able to irrigate. Ocean liners that call here must be supplied with water. We have seasons here when the rainfall is low. Our water supply must be increased. One of the ways to do this is to extend the forest areas. These areas were formerly more extensive than they are at present. They have been diminished by cattle depredations and fires. The theory on which we are now working is that the forests hold the rainfall, which seeps through the ground and later can be found in streams or pumped from artesian wells.

Our forests are not like those of the mainland. There grazing can be allowed, but our native forests will not stand grazing of any kind. Our trees are really large bushes with shallow roots, and during a dry season they die from lack of moisture. The only way to preserve their integrity is to keep stock out absolutely. When the early settlers came to these islands, they came in outrigger canoes; they brought dogs and pigs with them, with the result that we now have wild pigs, goats, and dogs. Larger animals could not be transported in such light craft.

Any vegetation introduced here seems to thrive as well as in its native land. The lantana, for instance, spread like wildfire and soon became a pest. Scientists went to Mexico to study the natural enemies of this plant and introduced them into Hawaii to fight the lantana, and it is no longer a serious factor. If the domestic animals which become wild, such as dogs, goats, pigs, and cows, were left undisturbed they would destroy our forests. This is especially true of the goats. The goats eat of the foliage, and tear up the roots and turf which soon becomes eroded, and our forests are soon destroyed. You would be surprised at the number of animals that have to be eliminated. About four years ago we had a goat drive in Kona on the island of Hawaii, where we had the assistance of 100 Boy Scouts; 7,000 wild goats were gathered. Later the cowboys slaughtered them, the hides being used for leather and the bones for fertilizer. We also had three other drives in the Puna district and through part of the Kilauea National Park and got a total of over 5,000 goats, thus helping to conserve our forests at a cost of only 8 cents per goat. On the island of Maui were some rare plants and trees which were being destroyed by the wild goats, so we got some expert cowboys over there to shoot them. The legislature recognizes the necessity of these goat drives and appropriates a certain sum for this work.

In regard to the extent of our forests, we have set aside 916,000 acres, 65 per cent of which are treated as public lands. We hope to bring this up to 1,000,000 acres in order to make sure of our water supply for the future. We have been able to work in recreation in our forest reserves as a subsidiary use. For instance, back of Waimea Canyon on the island of Kauai there is a plateau about 3,500 feet above sea level, with a stream which we stocked with rainbow trout from Idaho. In three years they have grown to be 14 inches long. Some time ago I asked the Attorney General about opening up camp sites and he stated that the Board of Forestry had authority to do so, and so we opened up camp sites with 10-year permits for the residents of Kauai. The rental amounts to only $10 an acre per year and 40 of these camp sites are now rented. The money collected is put back into developing trails, marking signs, etc. We are working, then, along the same lines here as on the mainland, getting people up onto the higher levels.

When making our survey on the island of Hawaii we stretched the law a point and included the Akaka Falls, 418 feet high, near Hilo. Here we constructed good trails and a resthouse and it is now a favorite picnic place. This was done at a minimum of expense and with no detriment to the forest. Mauna Kea has been made a forest reserve and we are planting trees there so that visitors in the future will find some fuel wood, as it gets very cold 13,000 feet above sea level.

While we do not conserve wild life which destroys the forests, we do conserve the native birds and we have very stringent laws protecting them. The only exception made is for scientific purposes and I only know of one instance. The birds which depend on honey from the flora have been driven back by the onslaught of the domestic animals. Botanically, there is a great deal of recreation in our forests. In the bird park at Kilauea we have the only tree of its kind in the world, the mountain hau tree. The sandalwood tree was largely depleted by the early trade with China, but I find that it is coming back in our forests again. There is so much romance connected with the sandalwood, and tourists expect to get the odor from a leaf, but it is necessary to dry the wood before the odor is apparent. About three weeks ago on Lanai I found a tree that had been reported as extinct in Professor Rock's book on the trees of Hawaii. We have also an interesting fiber plant here which was used by the whalers who came to winter here in the early days. They used it for their harpoon lines and the Hawaiians used it for fishing nets on account of its strength. I have a piece of it here. [Showing piece of fiber plant.] This plant grows in the wettest places around waterfalls, and can not be raised commercially. The land shells on our trees are numerous and beautiful. I have a box of them here for

you to see. [Illustrating.] As you know, they are small snails. They add to the interest of our forests. Botanically there is a great deal to see and learn in our forest reserves.

The CHAIRMAN. We thank you, Mr. Judd, for your address. Are there any questions?

Mr. EHRHORN. Referring to the talk by Mr. Houghton, the question arises in my mind as to why we do not teach children more about nature study. I spent 11 years in Europe and I found there that the children knew the names of trees and flowers, and that this knowledge has come down from generation to generation. We should encourage more nature study. Might it not be a good thing to have a summer school for instruction in these things?

The CHAIRMAN. I heartily agree with you, and I might say that we have one or more nature guides in many places. We shall be glad to answer this question more fully this afternoon. Mr. Boardman also asked me to explain my previous statement as to how recreation areas pay in dollars and cents. Recreation is the wisest use that can be made of certain areas, and I am prepared to back up that statement. It often increases the income from certain areas due to the camps, hotels, etc. The foresters find that protection of watersheds and recreation go hand in hand, especially in the drier areas like southern California. It may be that eventually a large proportion of that section of the State will have to be preserved with very little timber cutting. Before we leave the subject of conservation, I should like to ask Mr. Mather to say a few words about the similar situation in the Grand Canyon when the burros were destroying the flora.

Mr. MATHER. No doubt when you had your goat drive here, you had the same experience that we had—to meet a certain amount of false sympathy for the goats. In the early days when prospectors went into the Canyon of the Colorado they took burros with them, but when they came out they left the burros there. They increased very materially and in that country herbage is sparse. So the burros almost destroyed the flora until we decided to have a campaign against them. Now the burros are no longer there and we are replacing them with antelope from Nevada. At first these delicate animals had to be fed, but now they get along on the natural growth. There was a deer drive in the Kaibab Forest, but this was done by a local man with the permission of the Governor of Arizona. He thought the deer were getting too numerous and, being a cattleman, he attempted to drive out the deer as he would cattle, with the result that the whole thing was a joke.

About keeping our roads down to a minimum limit, we still have great areas that are only traversed by trails. There will be one

motor road across Glacier National Park which will give the motorists a thrill; then, however, they have to park their cars and see the rest of the area on foot or on horseback. We want to do our part in getting people to appreciate the wilderness areas. Struthers Burt says that he was 19 days in the Yellowstone and only once saw any people. There is a new addition to the Sequoia National Park which extends to the top of Mount Whitney. There is a constant pressure to have roads built; many people want to see everything from the deck of an automobile. But in a place like the Kern River Canyon it would be a crime to build an automobile road. I think we shall be able to carry out a policy of leaving the High Sierra as it should be—primarily a trail country, at the same time having a few auto roads with which everyone will be satisfied. The Yosemite Valley must be given up to great crowds in winter and summer. Still in the 1,100 square miles of the park there are vast areas free from crowds. Up on the Tuolumne side of the valley you will find places that are virgin wilderness.

The CHAIRMAN. Thank you, Mr. Mather. Are there any questions?

MR. JUDD. I should like to ask Mr. Mather concerning the motive for the drive against the deer.

Mr. MATHER. It happened to be a very dry year and the region was overpopulated with deer, and they were getting very thin. The deer drive was not managed by the Forest or Park Service, but we were willing to let the local people see what they could do.

Mr. JUDD. There is one point which I forgot to mention. On Maui in the crater of Haleakala is the silver sword plant, which is very interesting botanically, growing elsewhere only in the Himalaya Mountains. This is becoming extinct, and I think Mr. Aiken, from Maui, would tell us about it.

The CHAIRMAN. Mr. Aiken, we shall be glad to hear from you.

Mr. AIKEN. Mr. Judd is right. The silver sword is one of the outstanding plants of the world. It is a magnificent thing to see. But it is fast disappearing from the crater of Haleakala. My first visit there was 36 years ago, and down in the crater by one of the cones was a garden of silver sword plants, about 8 or 10 acres in extent. To-day in that spot there is not one plant to be found. Wild goats, cattle, and people passing through the crater have destroyed them. There are but few perfect specimens now. If there is anything the Park Service can do to restore this plant, it will be a great benefit. Once I guided Nicholas Longworth and his wife, the former Alice Roosevelt, up to the summit, and we rested in the shade of some old trees and saw the goats in the crater. The goats may be picturesque, but, like the burros, they ought to go. They call me the "Mayor of Haleakala" because I have made 91 trips to the crater. I hope we will get a road to the top, but I do not want to see it go any farther

than that. We expect great things from Mr. Mather and Mr. Evans. The best tribute ever paid to Haleakala was by John Burroughs when I took him up there. Everything was just right—the clouds rolled away at the right time, and we stood there for 10 minutes without speaking a word. Then he turned to me and said: "I can say in all sincerity that this is the greatest sight of my life."

Mr. JUDD. Perhaps they are picturesque, but I should like to say that our brand of goats here is too prolific. Perhaps the Rocky Mountain goat could be introduced into Haleakala instead of those that are there.

The CHAIRMAN. Before leaving this subject of conservation, I believe we should look toward the formulation of resolutions which will express in some way our opinions on the conservation of our forests and wild life and the exclusion of exotics where they are detrimental. Therefore, I wish to appoint a committee to investigate this subject and report to the chairman of the last meeting. Mr. Houghton, will you serve as chairman of the committee?

Mr. HOUGHTON. I do not know enough about things here. I would suggest that you appoint the other members of the committee.

The CHAIRMAN. In that case I will appoint Mr. Judd and Doctor Miyoshi to consult with the other delegates and get a consensus of opinion. We now step from conservation in our own country to that other great country of Australia. Mr. Boardman will tell us about this.

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## *THE CONSERVATION OF NATURAL AREAS IN AUSTRALIA*

*By Ralph E. Boardman*

*Tree Planters' Association of Victoria*

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The matter of forest conservation in Australia differs from that in your country in that our forests are under State control and not under national control such as you have. I hope to-morrow to show you pictures, which will speak more forcibly than ever I can do. I should like to tell you that Australia is rich in areas for forest conservation. I do not know who said that "Australian flowers have no scent and their birds no song," but it is one of those wicked libels which are too often believed. Our country may not be the Paradise of the Pacific, but we can give Hawaii a good run for it. Some one has sung a dirge about Australia's "sunburnt plains." I think some one should also write a dirge about the mosquitoes of Honolulu. You have your prolific wild goats, but we have our rabbits; in this connection I might tell you, secretly, about our sending rabbit skins to the United States to make fur coats for the ladies.

It would be difficult in such a short talk as this for me to describe accurately the scenic areas of our country. Near Sydney are the majestic Blue Mountains. Tourists who spend only a day in Sydney and a day in Melbourne never see anything else, and it is a pity to miss seeing the Blue Mountains as well. Recently I spent one whole day walking through this region. There are three waterfalls together from which you get a view of the valley stretching below 1,500 feet. There are also many beautiful little gullies full of tree ferns, and when your American sailors were in Australia it was a pleasure to see how they enjoyed themselves among these tree ferns and in the forest. Among the bush are beautiful flowers and birds which are the wonder and glory of the place. You could walk around through these areas for weeks.

Near Brisbane and Melbourne large areas are set aside for conservation and recreation. I want to show you to-morrow a picture of the yellow Christmas tree which grows in western Australia and lightens up the scenery. In southern Australia there are also large conservation and recreation areas in our lake district. If there is anything this conference is doing, it is to inspire one to have these areas put on such a basis that they will always be conserved. Even now there is an effort being made in Melbourne to secure one of these areas for the erection of some educational buildings; but we are firmly opposed to this idea, and the matter may go over from the Melbourne Council to Parliament. We will not permit anyone to to take away our parks even for such a worthy cause as this. To-morrow I will show you some pictures, and I want to say that I am grateful for the inspiration of this conference, and that one goes back with the impression that national parks must be conserved for all time.

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*Discussion*

The CHAIRMAN. We thank Mr. Boardman for his introduction of the subject, which he will continue to-morrow. I am glad to see that Governor Farrington is here and I will ask him to tell us about the setting aside of areas in Hawaii.

Governor FARRINGTON. I shall be glad to speak, not that I can add anything of technical value, but I can express my interest in this particular section of the conference. The international phase of this subject appeals to me particularly. As travel on the Pacific has increased so much, an increasing number of people are passing from one country to another for rest aud recreation, mental and physical, or to see what of interest they can discover. This seems to me very important. Around the Pacific we have a number of natural



ENTRANCE TO THURSTON LAVA TUBES

areas that are coming into the minds and knowledge of people from all parts of the world. There are two natura parks in Indo-China which I have just learned about; these are areas which people from abroad may visit and enjoy. Our relations with Australia and New Zealand have become increasingly intimate, as large numbers of people from there pass through here. It seems to me that recreation is doing a great deal to promote international understanding.

As people pass along and visit these national areas they come in contact with other people and get a more sympathetic understanding. More and more the international phase of a historic monument, that of Captain Cook, has been developed. It was discovered that the land on which the monument now stands was deeded to the British Government by the Hawaiian monarch in the early seventies. So we now have the interesting situation of a plot of land in this Territory belonging to Great Britain. Sir Joseph Carruthers has been greatly interested in this monument, and an appropriation has been made for Australia to participate in the care of the monument. The question is now in the land court and we hope to have it become public land to be cared for by the Territory, in cooperation with Australia and New Zealand. This shows how these things in unexpected ways bring us together.

In this Territory we have done our best to show our support of municipal, Territorial, and national parks. The Territory has transferred many thousands of acres to the Federal Government. The title is in the Federal Government, but control is in the hands of the Territory. Thus we see that the Territory has of its own volition set aside areas for national parks and some of these areas you will see after this conference. Within the Territory the governor has the authority to set aside public lands for public use by executive order. During previous administrations the governor set aside such lands as municipal organizations indicated their desire to care for. In some instances the land has not been improved, but merely preserved for future generations. And so you will see that we are endeavoring to provide ample breathing space here in Hawaii.

The CHAIRMAN. Thank you, Governor Farrington. May I make one or two announcements at this time? Doctor Jaggar can not be with us this afternoon, but he will give his address to the delegates up at the volcano on Monday evening. I wish to say that this afternoon we will call for additional topics or questions for discussion; please hand these suggestions in memoranda to the chairman.

After hearing from our own country and Australia we will now listen to an address by Doctor Miyoshi, of Japan, on "Preserving the natural monuments in Japan." I take pleasure in introducing Doctor Miyoshi.

# THE WORK OF PRESERVING THE NATURAL MONUMENTS IN JAPAN

*By Manabu Miyoshi*

*Honorary Professor of the Tokyo Imperial University and Member of the Imperial Academy in Charge of the Investigation of Natural Monuments*

In Japan, as in other countries, the rapid extension of industry and the increased utilization of land in recent times have led to the extermination of rare plants and animals, the destruction of remarkable geological formations, and the marring of beautiful scenery and historical remains.

To preserve these natural and other monuments as far as possible, a resolution was introduced in the Imperial Parliament in 1911, recommending that the Government adopt measures adequate to their preservation.

The Government, agreeable to this resolution, at once began preparing for the work of preservation and finally, in 1919, enacted the law for preserving historic, scenic, and natural monuments.

Since that time the preservation of natural and other monuments has become the work of the State. The Department of Home Affairs, which is in charge of this work, has instituted the investigation of objects which are presumably worthy of preservation, and up to the date of April 10, 1927, the Minister of Home Affairs, in pursuance of the law, has designated 486 objects, whereof 197 are historic, 50 scenic, 184 botanical, 25 zoological, and 30 geological and mineralogical natural monuments.

As regards natural monuments, the law provides, first of all, for the preservation of the original flora and fauna of districts which are threatened with extinction, or for the protection of those remarkable geological and mineralogical structures and formations which are likely to be destroyed. The law, however, may preserve any natural object, whether large or small, e. g., an entire primeval forest, or alpine vegetation, the habitat of an animal, a valley, a cave, or even a single tree or rock; in short, the law is applicable to all kinds of botanical, zoological, geological, and mineralogical objects.

After this short summary of the regulations for preserving natural monuments I shall proceed to give brief descriptions of some of the botanical objects already preserved, together with a few examples of other natural monuments.[1]

[1] For the descriptions of natural monuments consult the following publications: Offical reports of natural monument investigations (in Japanese), issued by the Department of Home Affairs. Miyoshi, M., Bericht über die neuerdings gesetzlich geschützen botanischen Naturdenkmäler. (Botan. Magaz. Tokyo. XXXIX 465. 1925). Miyoshi, M., Die Naturdenkmalpflege in Japan. (Nachrichtenblatt für Naturdenkmalpflege, herausgegeben in der Staatlichen Stelle für Naturdenkmalpflege in Preussen, III, 4, 1926.) Preservation of natural monuments in Japan, issued by the Department of Home Affairs (1926). Miyoshi, M., Explanations of natural monuments (in Japanese). The Fuzanbo Publishing Co., Tokyo (1926).

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I. *Primeval forests.*—Primeval forests of different types are preserved in different parts of Japan.

1. Primeval forests of Nopporo, Moiwa, Maruyama, and Noboribetsu in Hokkaido. The Nopporo forest is all that now remains of an extensive primeval forest which once covered the Ishikari plain. Moiwa and Maruyama are famous for their abundant species of broad-leaved trees; while Noboribetsu is characterized by the remarkable presence of trees of warmer climates.

2. Primeval forests of Mount Fuji, Mount Kasuga, and Mount Bukkyo in central Japan. The forest preserves of Mount Fuji are situated on its northern side, the species of trees differing with the altitude. The forest of Mount Kasuga, standing in the rear of the town of Nara, consists mostly of broad-leaved evergreen trees, which are not found in any of the adjacent districts. Mount Bukkyo, the highest peak of the Yoshino range, is noted for its forest of *Abies Veitchii* Lindl., and *Picea hondoensis* Mayr.

3. Primeval forest of *Taxus cuspidata* S. et Z. *var nana* Rehd., on Mount Daisen, Tottori prefecture, western Japan. This dwarf *Taxus* tree, often planted in gardens, forms an extensive forest of its own on the gentle slope at the top of the mountain. It is the only forest of its kind to be found in Japan.

4. *Buxus* forest of Mount Kosho, Fukuoka prefecture, northern Kyushu.

This typical *Buxus* forest also is situated at the top of its mountain. The predominating species is *Buxus microphylla* S. et Z., to varieties of which are also present, viz, *var. japonica* Rehd. et Wils. and *var. rotundifolia* Nakai, together with some other trees.

5. Primeval forest of *Cryptomeria japonica* Don., on Yaku Island, Kagoshima prefecture. The *Cryptomeria* forest is found on the higher portions of this mountainous island, the low land being covered with luxuriant tropical vegetation. Here the *Cryptomeria* trees attain a great size, the largest specimen showing more than 1,600 annual rings.

II. *Alpine vegetations.*—Alpine vegetations of high peaks are preserved on some mountains of northern and central Japan. The most extensive preserve of this kind includes the peaks of the Shirouma range in the prefectures of Nagano, Toyama and Niigata, at an elevation of about 2,500 m. above the sea.

III. *Vegetation of peat bogs.*—Peat bogs of large dimensions occur in northern Japan, especially in Hokkaido, but owing to the reclamation of the land more and more of them disappear every year. As the vegetation of such bogs is interesting from ecological and physiological points of view, they have been preserved in two localities, Shizukari and Kiitappu, both in Hokkaido.

IV. *Offshore islets with original flora.*—There are in Japan only a few offshore islets which have remained free from human influences, and which consequently retain their original flora. The most noted examples are as follows:

1. Okinoshima, Fukuoka prefecture, in the southwestern part of the Japan Sea. The whole islet is covered with a primeval forest, and in spite of its rather northern situation the forest flora contains species of warmer and even subtropical regions, as for example, *Citrus Aurantium* L. *var. Tachibana* Mak., the wild orange, *Evonymus Chibai* Mak., *Cocculus laurifolius* DC., *Arisæma ringens* Schott., *Asplenium Nidus* L.

2. Shibushi-Birojima, Kagoshima prefecture, in the Ariyaké Bay, southern Kyushu. Here the original flora is preserved almost perfectly. The primeval forest consists mostly of broad-leaved evergreen trees and shrubs, together with various kinds of twining plants. The forest floor is overgrown with tall herbs and large ferns, such as *Alocasia macrorrhiza* Schott., *Alpinia chinensis* Rosc., *Angiopteris evecta* Hoffm., *Pteris Wallichiana* Ag., etc. The most characteristic feature is, however, the genuine forest of *Livistona chinensis* Br., on the mountain slopes of the islet, except on the northern side. This *Livistona* forest represents the northern limit of distribution of that palm.

V. *Boundaries of the natural distribution of some remarkable plants.*—As Japan stretches from north (50° N. lat.) to south (21° 45′ N. lat.), the boundaries of distribution according to climate and other conditions can easily be traced.

1. Northern boundaries of distribution of *Cycas revoluta* Thunb., in the southern parts of Kagoshima and Miyazaki prefectures. *Cycas revoluta,* native of the Loochoo and Amami-Oshima island groups, reaches its northern limit of distribution in the southern parts of Kyushu.

2. Northern boundaries of distribution of *Camellia japonica* L. in Aomori and Akita prefectures. *Camellia japonica* endures cold and is distributed up to the northern end of the main island of Japan.

3. Southern boundaries of distribution of *Rosa rugosa* Thunb., in Ibaraki prefecture on the Pacific coast and Tottori prefecture on the coast of the Japan Sea.

*Rosa rugosa* is a beautiful wild rose with fragrant flowers, and is common to the seashores of northern Japan. As the plant is not vigorous at the limit of its distribution it needs careful protection.

VI. *Wild plants showing remarkable monstrosities.*—Teratological formations are rarely met with in wild plants. The following are two noteworthy examples:

1. Habitat of the clustered chestnut at Ishihato-oka, Iwaté prefecture. The clustered chestnut (*Castanea pubinervis* Schn. var. *caudata* Miyos.) has been found quite recently, growing wild on a mountain slope among ordinary chestnut trees. In the clustered chestnut, the catkin bears female flowers only, consequently, in autumn a large number of burs of various sizes are produced often forming a tail-like cluster.[2] The burs of the basal part of the cluster contain nuts, while those of the middle and apical parts are empty. In fact this tree is a female plant, derived from the ordinary monœcious one. Of this clustered chestnut only a single individual exists.

2. Habitat of the jointed *Torreya* on Mt. Gomado, Niigata prefecture. This curious tree, *Torreya nucifera* S. *var. articulata* Miyos., is characterized by the complete inversion of all leaves attached to an annual shoot. Such an abnormal growth will the next year produce a shoot which is perfectly normal, thus giving the branch a jointed appearance. As the inverted leaves are paler in color, the jointed Torreya can easily be rccognized among the trees of the ordinary *Torreya* (*T. nucifera* S.). The jointed form occurs in many individuals and is to be considered a mutant of the ordinary Torreya.

VII. *Rare plants.*

1. Habitat of *Gleichenia kiushiana* Mak.,[3] on Mount Kurokami, Saga prefecture, northern Kyushu. This handsome fern was found for the first time by T. Kaneko in 1904, growing in the midst of a colony of *Gleichenia glauca* Hook. In general form *G. kiushiana* closely resembles *G. glauca*, from which it differs, however, in having pointed pinnæ and in the pale green (not white) undersurface of its leaves. In considcration of natural habitat and morphological characters there is reason to belicve that *G. kiushiana* has arisen by mutation from *G. glauca*. It has since been found that *G. kiushiana* grows also on Mount Takakuma, Kagoshima prefecture, southern Kyushu. Except in these two habitats the fern is not known in Japan.

2. Habitat of *Phylloderma sacrum* Sur., in the spring at Suizenji and in Lake Ezu, Kumamoto prefecture. This peculiar fresh-water alga of membranous form and a pale greenish-brown color was first described by Suringar,[4] in 1872. It resembles a species of *Nostoc* in external appearance, but is distinguished from the latter by the structure of the thallus. Thc alga occurs on the surface of the sand under clear spring water in some other parts of Kyushu.[5]

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[2] Pollination is probably effected by transportation of pollen from the male flowers of the ordinary chestnut trees growing near by.

[3] Makino, T., Botan. Magaz., Tokyo, XVIII, p. 140, 1904.

[4] Suringar, W. F. R., Illustration des algues du Japon., 1872, p. 71.

[5] In Kanakawa village, Fukuoka prefecture, this alga, which was formerly found to occur in a spring, is now made to grow in a spacious basin, to which the spring water is conducted. In summer, when the alga attains its full growth, it is collected and prepared as an article of food.

VIII. *Giant trees.*—Giant specimens of camphor trees, *Cryptomeria*, *Ginkgo*, cherry trees, oaks, and others are to be found in the grounds of shrines and temples, where they were planted in remote ages and since then have been protected as "sacred" trees.

1. The camphor tree of Kamo, Kagoshima prefecture. This camphor tree, *Cinnamomum Camphora* Nees et Eberm., is the largest specimen of its kind, measuring 22.5 meters in girth at breast height. In Kyushu and Shikoku several other giant camphor trees, though somewhat inferior in size, are carefully preserved.

2. The *Cryptomeria* of Ishidoshiro, Fukui prefecture. This giant specimen of *Cryptomeria japonica* Don. is of very great age and is about 14 meters in girth at breast height.

3. Jindaizakura, the *higan* cherry of Yamataka, Yamanashi prefecture. This is the largest of all cherry trees in Japan, being 10.5 meters in girth at breast height. It belongs to the typical higan cherry, *Prunus aequinoctialis* Miyos., with white flowers and swollen, hairy calyx tube.

4. Takizakura, the weeping cherry of Miharu, Fukushima prefecture. Takizakura, "Water-fall Cherry," *Prunus aequinoctialis* Miyos. *var. pendula* (Max.) Miyos. *f. rosea* Miyos., so called from its long, slender, pendulous branches, is the most noted among all the weeping cherries of Japan. The flowers are a light pink and very beautiful. The girth of the trunk at breast height measures 10 meters, and the age is estimated to be about 600 years.

X. *Noted trees.*—These are known either for their remarkable forms or as rare species or varieties.

1. The root-stilted pines of Nishihama, Wakayama prefecture. These are black pines, *Pinus Thunbergii* Parl., growing on sand dunes along sea beaches. In consequence of the removal of the sand by the winds the roots are exposed high above the ground, giving the tree the appearance of standing on stilts. In some of these trees the elevated roots are so high that a man on horseback can pass through them. The root-stilted pines are interesting, as they show very clearly the branching and direction of the roots which otherwise are almost never seen.

2. Fudanzakura, the ever-flowering cherry of Shiroko, Miye prefecture.

This Fudanzakura of Shiroko, *Prunus semperflorens* Miyos.,[6] has been standing for more than 200 years in the grounds of the temple of Kwannon. The tree produces flowers and leaves all the year round, some of the older leaves turning bright red in winter. Although cherry trees of this kind are to be seen in some other places, yet the tree above mentioned is the oldest and most famous.

[6] Miyoshi, M., Untersuchungen über japanische Kirschen II, Botan. Magaz., Tokyo, XXXVI. No. 421, 1922.

With regard to the zoological natural monuments now preserved, the following examples are to be mentioned:

1. Habitats of the giant salamanders, *Hegalobatrachus maximus* Schl., in the prefectures of Gifu, Okayama, and Oita, central Japan.
2. Sanctuary for the raccoon dog, *Nyctereutes viverinus* Temm., in Mukojima a small island in the Inland Sea, Yamaguchi prefecture.
3. Large colony of an albino variety of the elaphine snake, *Elaphe chinacophora* Bovie in Marifu village, Yamaguchi prefecture.
4. Habitats of the giant eel, *Anguilla mauriana* Bennett, at the northern limit of distribution in the prefectures of Nagasaki, Wakayama, and Tekushima.
5. Habitat of tropical fishes in Jonoiké, a thermal spring pond at Ito, Shizuoka prefecture.
6. Resorts of the luminous squids, *Watasenia scintillans* (Berry), along the coast of Uotsu, Toyama prefecture, in the Japan Sea.
7. Breeding places of the black-tailed gallus, *Larus crassirostris* Vieillot, Kabushima, Aomori prefecture.
8. Winter resorts of various species of cranes, *Grus japonensis* P. L. S. Muller, *G. leucogeranus* Pallas and *G. monachus* Temm., at Akuné, Kagoshima prefecture.

Lastly, the examples of geological and mineralogical natural monuments are as follows:

1. Limestone caves in the prefectures of Yamaguchi and Oita.
2. Sinter cones and calcite balls at the thermal springs of Yumata, Nagano prefecture.
3. Siliceous oolite at Sankyozawa, Akita prefecture.
4. Lava tunnels on Mount Fuji.
5. Orbicular granite at Minedera-yama, Ibaraki prefecture.
6. Hokutolite, a radioactive mineral at Shibukuro hot spring, Akita prefecture.
7. Columnar joints of basalt, at Nanatsugama near Karatsu, Saga prefecture.
8. The Innumerable Pot-holes at Senami, Niigata prefecture.

(After reading his paper, Doctor Miyoshi gave a brief talk illustrated by a number of colored lantern slides of Japan.)

Adjournment.

## *Wednesday Afternoon, April 13, 1927*

*Topic: "The Preservation of Natural Areas for Scientific Study"*

*M. Miyoshi, Presiding*

The session was called to order at 2 o'clock by the chairman, who said:

This afternoon we are to consider the scientific aspects of preserving natural areas, and especially the matter of coordinating the scientific and recreational uses of these areas. Mr. Chauncey J. Hamlin, president of the American Association of Museums, will now address us.

## *STUDYING NATURE IN PLACE*

*By Chauncey J. Hamlin*
*President, American Association of Museums*

The subject of studying nature in place has received considerable attention during the last two or three years from the committee appointed by the American Association of Museums, especially to examine the details and possibilities of this subject. The first work of this committee was a project in cooperation with the National Park Service. Through such cooperation a new idea in museum activities was born. Through the generosity of the Laura Spelman Rockefeller Memorial, of New York City, money was made available for the construction of a museum building in Yosemite National Park. You will observe several photographs on the walls of the completed building, which is now visited daily by thousands of Yosemite tourists.

Mr. Ansel Hall, who told us yesterday of the educational activities in the national parks, was the very able executive agent of this committee and assisted in the planning and construction of the building. He has contributed very largely to the idea which I am going to describe to you.

The primary function of the Yosemite Museum is to demonstrate intelligently to visitors what can be seen in that wonderful valley and to tell them something of the geological history of the valley itself, as well as how the flora and fauna of the park change in character on account of the difference in altitudes.

Mr. Hall was also responsible for the erection, at Glacier Point, of a small lookout station, which was built of granite and equipped with a high-powered binocular telescope. Through the use of this telescope it is possible to use both the Yosemite Valley and the High Sierra in demonstrating the geology of the region.

Why erect a museum in a park? This question has been asked many times, and the answer may be found in the Glacier Point Lookout, which gave birth to a new type of museum, known as the "Trailside Museum," the purpose of which is to explain about nature in place. Perhaps I can visualize this idea by describing briefly some of the plans for the erection of a similar Trailside Museum at Grand Canyon.

The Grand Canyon of Arizona offers one of the most wonderful natural exhibits anywhere in existence for telling an interesting story of the earth formation and its history. A long, low gallery will be built just over the edge of the canyon, where it will be entirely unobtrusive, and will give the visitor an additional impression of the depth of this mighty gorge. As the visitor descends the stone steps into this low building, he will immediately see a battery of telescopes pointing downward, for here again natural exhibits will be used in place. The big objective of this branch museum, with its battery of telescopes, is to tell, in a terse manner, the geological story of that great canyon.

One mile below the observer, the Colorado River has cut a V-shaped canyon into the ancient granite core. A label placed close to the telescope trained upon this core, will explain how this granite arose beneath several thousand feet of other ancient rocks which were entirely worn away by erosion before subsequent layers of sedimentary rocks were deposited there.

In Professor Dayley's book, "Our Mobile Earth," a very fine chapter is given, using this canyon as a demonstration. The lowest layers of rock were laid down first, all beneath the sea. Layer after layer of sedimentary rock were formed, and in all probability, series of sedimentary strata as thick as those apparent at present were worn away by erosion before the second chapter in the history of the canyon began.

This second chapter is one of the development of life upon our planet. Two years ago a ranger uncovered a stratum of rock with footprints on it, one-half mile down the canyon wall. Instead of removing this rock and putting it in a glass museum case, we believe that it will be of far greater value to leave it in place, and there, in

its natural setting, to tell the story of the prehistoric animal which thus left its imprint. A subsidary museum will be erected there to protect a portion of the slab, and perhaps we may exhibit a small model of the animal, as reconstructed by palentologists. In the lowest formations we find the earliest evidences of life, and as we elimb out of the canyon we come upon evidences of the reptilian age, finding on the plateau at the rim footprints of great dinosaurs. This is the idea of the trailside museum—to make it possible to see geological history in the making. In no other place in the world ean this story of dynamic and historical geology be told to better advantage than here at Grand Canyon.

The trailside museum, however, ean be applied to almost any natural area, and offers a remarkable possibility of making natural features interesting and easily understood.

Palisades Interstate Park, just outside of New York City, is one of the most wonderfully equipped State parks in our country. In this park there are five small ponds, in a protected area which is being reserved as a natural garden; and close to one of these lakes there is being erected a small building which will be used as a trailside museum, explaining what can be found in the immediate neighborhood. Imagine the possibilities for trailside museums in Yellowstone National Park. The National Park Service has already developed a model geyser that erupts every three minutes. The working parts are all of glass, so that visitors may see for themselves how geysers aetually work. This is just the beginning of an important trailside museum. Another possible loeation for a trailside museum is at Mammoth Hot Springs, where the wonderfully eolored algæ are found, each color living only at a certain temperature. Niagara Falls is also an ideal spot for the location of such a trailside museum, to tell the story of the Great Lakes—how the glaciers came through them and how the falls have worn back in the great valley during seventy or eighty thousand years, to the point where they now plunge into the gorge. You can carry out anywhere, this idea of studying nature in place.

Think of the marvelous opportunities before us right here in Honolulu. Doetor Bumpus tells of an experiment which he made last year on the beach near Cape Cod. He erected a small shelter and arranged in it the odds and ends which he found on the beach in the immediate vieinity. This told an interesting story in a very interesting way, and hundreds of people visiting the beaeh came to examine this little museum. They took away with them an increased interest in the beaeh, whieh would otherwise have been entirely hidden to them.

What is the objeet of erecting trailside museums or establishing nature trails? Is it to label a few trees? Is it to tell an interesting

story here and there? What is the ultimate objective? I can only say, in answer, that it adds to the interest of life, and that it adds to the interest of people. Hundreds of thousands of persons go to Niagara Falls and see the water going over the brink, marvel at the spectacle, and then go away. Also, visitors to Grand Canyon stop at the rim, and marvel at the beauty of it all. If they viewed these spectacles with more intelligent eyes, however, they would get more of a thrill from their experience.

You can apply this trailside museum idea anywhere. As a matter of fact, Doctor Lutz, of the American Museum of Natural History, has developed a number of nature trails in Central Park, right in the heart of New York City. He says that it is fun to introduce people to these trails, and that it adds to the fund of happiness and the enjoyment of life.

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*Discussion*

The CHAIRMAN. We have with us, to-day, Dr. S. Oda, of the Keijo Imperial University, Japan, and I should like to call upon him for his remarks at this time.

Doctor ODA. Being in attendance at the education section of this conference, I greatly regret the inability to attend the meetings of the recreational section, in which I am much interested. The problems under discussion to-day are of particular interest to me on account of my duty in connection with our Government museum. I am also greatly interested in hearing the discussions and reports and will look forward with anticipation to receiving copies of the proceedings of this meeting.

The CHAIRMAN. The meeting is now open for further discussion, regarding the exhibit of nature in place.

Mr. HOUGHTON. The mention of Doctor Bumpus' name brings to my mind an incident in my university life. Our class was told by him to go to the window and report to him what they could see. Each member attempted to look further away than the others, and to describe objects almost out of sight. Doctor Bumpus finally asked them "Why not see the dust on the window pane? Learn to see what is in front of you; you will get a great deal more out of life from looking at what is about you." Dr. Clinton Abbott, curator of the San Diego Museum, once made a collection of pictures showing the bird life in Central Park, New York City, and it is surprising the number of species which he found in that most thickly populated section of our country.

Mr. JUDD. Mention by Mr. Hamlin of the little beach museum at Cape Cod reminds me of the great possibilities on our own beaches.

It is remarkable how many things of natural interest, and also "curiosity" can be found. Two years ago I went as topographer of the Tanager expedition, under the direction of the Bishop Museum. French Frigate Shoals are small islands of volcanic rock and sand. On these beaches we found not only a great abundance of materials which could be used for exhibits, but also many exotic things, such as bottles, coconuts, and even golf balls, which had floated hundreds of miles before reaching this final destination.

The CHAIRMAN. We all regret that Dr. T. A. Jaggar, director of the Hawaiian Volcano Observatory, is not with us to-day to deliver his address, "The opportunity for scientific research in the national parks of America." We will, instead, have the pleasure of hearing him next Monday night, at the Volcano House, where the enjoyment of this talk will be accentuated by our having the volcano itself before us.

In order that the importance of setting aside areas for scientific research will be considered at this meeting, I want to call upon Mr. Hall to introduce this subject.

Mr. HALL. In Europe I found that there were two distinct kinds of national parks. The first is set aside to be utilized by scientists only in the study of natural conditions; and the second, as a recreation area. The Swiss National Park is of the former type, being set aside entirely for scientific research. It is not a national park, as we know them in our country, but a park utilized in its virgin condition as a great out-of-doors laboratory to be studied by students.

One of three national parks in Italy, two of them—Abruzzi National Park, about 50 miles east of Rome, and Sila National Park, in far south Calabria—are available to the public as recreation areas, as are our own national parks. Grand Paradiso National Park, in the Italian Alps, however, is reserved as is the Swiss park, for research. In our country we must make provision not only to accomodate visitors and to interpret scientific facts for them through our educational division, but we must also set aside areas (parks within parks, if you please), which will be absolutely protected and kept in wilderness condition, so that these areas may be studied from time to time. At the present time there are still great virgin areas in our country. Within the next half century or century, there will be none left, except what is rigidly protected. Certain areas in our parks will, therefore, be kept as natural reservations for study; other areas, while kept in as nearly a natural state as possible, will have to be used for camping.

Five years ago, Dr. Harvey Monroe Hall, a California botanist, conceived the idea of setting aside an area in one of our national parks, where no casual visitor could enter—this area to be a natural laboratory and kept absolutely inviolate. During the past year, such an area was set aside in Yosemite by order of the Director of the National Park Service. This area is in the Hudsonian and Alpine

Arctic life zones, and varies in altitude from 8,000 to 12,000 feet. It is a region containing a very interesting flora and fauna. Selection of such areas involves the solution of several very important problems; and before such areas are set aside, there should be an exhaustive study made of all possibilities from both the scientific and administrative point of view. This is vitally necessary, because eventually there will be far more visitors in our national parks than there are to-day.

These few remarks have merely been for the purpose of introducing the subject of the reservation of natural areas for scientific study, an important project, not only in the national parks but also in all parts of our country.

The CHAIRMAN. There will surely be further discussion of this matter of the reservation of areas for scientific study, and I should be glad for further remarks from anyone of the delegates.

Mr. HAMLIN. In setting aside such areas, either in or out of national parks, I have heard it suggested by scientific men that it is exceedingly advisable to set aside many such areas under Government supervision—areas which would be located in every typical section of the country, for purposes of scientific research. One reason which they have mentioned is to me an exceedingly interesting one, namely, that of the values of plant life for food and medicine. It is a curious thing that of the plants we use in these respects to-day many were entirely unknown before the discovery of America. As a matter of fact, the plants of the Western Hemisphere were absolutely unknown to the people of the Eastern Hemisphere. No duplication was found, and the same is true of animals, excepting the dog. This is a most interesting and curious fact. It is doubtful if we have reached the end of our tether in developing our food plants and medicinal herbs; and it is extremely advisable that every country the world over should set aside typical areas and hold these inviolate until such a time shall arrive when scientific investigation may bring to the world a discovery of inestimable value.

The CHAIRMAN. Thank you, Mr. Hamlin. Is there further discussion on this subject?

Mr. DEGENER. It seems to me that the entire Hawaiian Islands should be protected against the introduction of harmful exotic plants and animals. Within our archipelago different plants and animals are found on different islands. It is also true that the natural communities of plants and animals differ greatly even in different valleys on the same island. The island of Kauai, which lies to the northwest of us, is the oldest of the chain, and has therefore the deepest canyons and the most varied flora and fauna. Hawaii is the largest, and also the youngest island, and has not yet been in existence long enough to develop deep canyons. If we could only make the public

realize the fascinating things to be found in our own plants which are peculiar to Hawaii, they would pay more attention to the disturbance of natural conditions.

Many Hawaiian plants are becoming exceedingly rare and are now to be found only in limited areas. The kokai plant, for example, is passing out of existence; in fact, our native flora seems to be doomed. In a few years many of our native plants will be extinct. Therefore let us collect specimens before they have disappeared, and ship them to museums, so that they can be preserved for study at some future time when such plants have been lost to us forever.

Some of our plants are exceedingly interesting to botanists. The kokai, for example, is the missing link between the cotton and the hibiscus. Mr. Judd told us of his efforts in exterminating animal pests, but I believe he should also concentrate on the extermination of plant pests.

The CHAIRMAN. The native plants should not be allowed to perish. It is a sin for science to allow it.

Mr. JUDD. The note of warning sounded in Mr. Degener's speech is justified, and I believe that we can not be too careful in the matter of controlling plant as well as animal pests. I agree with Mr. Hamlin that natural areas should be preserved, with the idea of conserving species for their food value.

Here in Hawaii vegetable dyes were widely used during the early days, but the art of producing these colors is now practically lost. I doubt if there are at present even 12 Hawaiians who can produce natural dyes for coloring tapa cloth. These dyes may not have a commercial value, but some day they may be of great scientific value in the arts.

A note of warning as to plant pests is of great concern to those as deeply interested as are we in the forestry department. The hilo grass, which has been introduced from South America, forms such a thick mat that the native seeds can not reproduce. The seed of this grass may be carried on one's shoes and it will rapidly cover an area and prevent the reproduction of trees. There has been set aside in our mountains some 14,000 acres of forest land, which will be preserved in its natural condition, if possible. People have not been allowed to enter this reservation, for fear of their carrying the hilo-grass seed.

Staghorn fern is another plant which prevents our trees from reproducing, and in time of drought is a great fire menace. This matter of forest reproduction is exceedingly important.

Mr. DEGENER. The matter under discussion is also one for scientific research. The administrative forest officers are too busy, and therefore the local legislature has been asked for $2,500 for scientific research concerning the forest problems on the island of Oahu.

Professor NEWCOMB. Permit me to suggest, Mr. Chairman, that Doctor Lyon tell us more about this subject.

Doctor LYON. Plants here in the island are strangely sensitive to any disturbance. When Vancouver first brought cattle to the island, he found many forests so wet and dense that cattle could not penetrate them. The cattle were turned loose to graze, however, and along the margins of the forest and other areas trees soon commenced to die.

In the Kehenna forest, in the Kohala, Hawaii, district, in recent years, was one of the finest pieces of native forest in the islands. From 1915 to 1918 we experienced rather severe drought, and during these years cattle were allowed to graze in this forest. Within two years all of the trees had died and the area looked like a graveyard of trees.

Within only 10 miles of the border of this forest is a growth of native ohia trees, where cattle have roamed for over 40 years, and still the trees continue to flower and seed every year. The reason for this great difference is that in this particular case the soil is underlined by volcanic sand, and the tree roots can penetrate deeply where they will not be destroyed by cattle. Protection against grazing is largely a matter of protection of the soil. Most of our native plants prefer a well-drained soil and are hardy where they find it, but the conditions of our shallow volcanic soil are often invaluable.

The white man first introduced cattle into this country, and is also responsible for the coming of exotic plants. The hilo grass came first from South America. It is very aggressive and spreads rapidly in our hospitable soil. This grass will soon fill in any open space where the sun shines, and it will hold the area against all newcomers. The ultimate result is that the native trees are exterminated. The forestry problem is largely one of preserving the proper plants.

With the conservation of forests goes also the conservation of water, and we must have other plants as well as trees in our forests in order to preserve the integrity of these forest communities. If it appears to be impossible to reproduce our native plants there, we must turn then to exotic plants which will grow under our conditions. It would seem advisable for us to go to the older volcanic regions and there search for plants which are hardy and might thrive under our conditions. Mellistome is a decorative plant of this type which was brought from Java in 1911 to the island of Kauai. In 1922 plants were found 2½ miles away from the original. It is probable that this will make a good undergrowth for our forest. Of course, it will bother the ranchers to some extent, but they will have to contend with that inconvenience.

The CHAIRMAN. While we are discussing scientific problems, we will also be addressed upon the subject of bird banding by Dr. S. Uchida, expert of the Ministry of Agriculture and Forestry, of Japan.

## *SOLVING THE PROBLEM OF BIRD MIGRATION BY BANDING*

*By S. Uchida*

*Of the Ministry of Agriculture and Forestry, Japan*

At this conference I had intended to address you regarding "Institutions established and in operation in Japan to-day for the preservation of indigenous birds and mammals, or those beneficial to agricultural and forestry industry," but as I have already distributed among you a pamphlet, entitled, "The present condition of the protection of birds and mammals in Japan," to take the place of an address, for economizing as much as possible the time of this important conference, on the one hand, and for the reason of not being particularly fluent in speaking on my part, I shall refrain from discussing that subject now. However, I should like to say a few words on the subject of the bird-banding experiment in Japan which has been conducted since 1924, with the view to solving many problems touching the habits and migratory movements of birds as a fundamental research regarding the protection of birds.

The method of bird banding in use in Japan, generally speaking, is similar to that actually adopted in the United States and Canada; in other words, it consists in putting a numbered aluminum band on the legs or tarsus of a bird which has been captured; then liberating the bird, then recording when it was recaptured, and collecting many of such records so as to achieve the aims of the investigation.

In the United States trapping stations are especially established for bird banding, but in Japan there is no such institution, because we can carry on bird banding or recapture by availing ourselves of birds caught by fowlers, as there are about 10,000 such fowlers, or a class of hunting licensees who catch game birds by using traps, nets, etc. As is mentioned in the pamphlet I have distributed among you, it is, of course, not advisable from the viewpoint of the protection of birds to permit netting or trapping, because it leads not infrequently to abusive capture. However, a time-honored custom has left in Japan many fowlers as above mentioned, who are incidently affording facilities for bird banding. Bird banding is mainly carried on in Japan by experts of various local governments, under the direction of the department of animal industry, in the Ministry of Agriculture and Forestry. The bands used are made of aluminum and are of three kinds: Lock bands, split-ring bands, and flat-strip bands,

in accordance with the sizes of the birds on whose tarsi they are put. On each of these bands are engraved a number and three idiographs, "NO RIN SHO," signifying the Ministry of Agriculture and Forestry. When a bird with one of these insignia on its leg is captured, the band is sent by post to the Ministry of Agriculture and Forestry, where the information is recorded on a card. As I have already stated, it was in January, 1924, that bird banding was first started, and from then to December, 1926, birds to the number of 17,428 have been banded, with 555 returns—approximately 3.2 per cent of the banded birds. Statistics show year by year 5,582 banded and 240 returns in 1924, 6,759 banded and 196 returns in 1925, 5,086 banded and 116 returns in 1926.

The birds that up to the present have been banded are gray heron, 10 species of ducks and Mergansers, water hen, quail, bartailed godwit, wandering tattler, browneared bulbul, dusky ouzel, eyebrowed ouzel, pale thrush, and 10 species of Emberizidæ, thus amounting to 30 species.

Let me mention now the principal places where these birds have been banded:

(1) Species of Turdidæ and Emberizidæ: The Tohoku district, or the northern part of the mainland of Japan, and the Hokuriku district, of the coast district of the Japan Sea. In the former district, the birds had arrived there from the northern part of the Asiatic Continent via Hokkaido and the Tsugaru Straits, while to the latter district they migrated from the Asiatic Continent via the Japan Sea.

(2) Ducks of various species: Districts where birds are netted on lakes and marshes in the inland regions of the country.

(3) Quail: The districts, viz, the breeding grounds in Hokkaido and the Tohoku district, or the northern part of the mainland hibernating places in Kyushu, or the southern part of the mainland.

(4) Gray heron and water hen: Their breeding places inland.

(5) Godwit and tattler: The Imperial preserve on the Bay of Tokyo.

The foregoing is a brief survey of bird banding in Japan. As to results obtained from the banding, a few interesting facts have thus far become known to us, but I shall refrain from speaking about them for the time being, as it seems more advisable to refer to them after collecting more details which will be gathered by the continuous operation of banding for several more years. At the present conference, I shall confine myself to simply reporting to you the fact that bird banding is actually going on in Japan.

In closing this brief address I wish to express the hope that fresh impetus will be given to the study of bird migration between the various countries on the Pacific Ocean; that special attention will be paid to bird banding; and that the capture of birds banded in Japan will be reported to the Japanese Ministry of Agriculture and Forestry.

*Discussion*

The CHAIRMAN. We should be glad to hear something of the bird life in different countries.

Mr. BRYAN. We have a few migratory birds in Hawaii; the golden plover of Alaska and the teal duck from the mainland. So far we have never tagged the birds, but I believe this would be a very interesting experiment.

Mr. HAMLIN. Where do the Japanese birds migrate to and from?

Doctor UCHIDA. They migrate between Japan, Siberia, the Philippine Islands, and often Alaska.

Mr. ERHORN. The native birds of Hawaii are now very scarce. The English sparrow and the mynah bird are to be found everywhere, and have driven out many of the indigenous species. The mynah, which was originally brought from India, is very useful in the destruction of insect pests, but is so pugnacious that he becomes very troublesome at times. Other birds have also been imported during the last few years. The peewee from Australia has been brought in to feed on the grubs of the so-called Japanese (it is really Chinese) beetle. The willywagtail, brought from Australia, is an enemy to the horn fly, which has proved to be such a pest to our cattle. We want to import more useful birds, but we must be very careful not to import birds which might be detrimental to the insects which destroy pests.

We have also in view the meadow lark, which eats grasshoppers, meadow worms, and caterpillars, and have already introduced the sky lark. In order to import the meadow lark it was necessary to change the California State laws as well as the Federal laws, in order that a few specimens of these birds might be brought to the islands. As a general rule Temperate Zone birds do not do so well here as do those from the semi-Tropics.

Recently the United States Department of Agriculture has obtained permission to import the Peking nightingale, or Japanese bush robin, from China; this bird is a very useful fly catcher.

Mr. DEGENER. Why do the laws of Hawaii allow an open season on birds and other States do not? Should not our laws comply with theirs?

Mr. JUDD. According to the Territorial game laws the golden plover may be shot at certain seasons. The question of an open season is, as yet, unsettled. Our seasons may be contrary to the migratory-bird treaty with Canada. There is at present a bill on this subject before the legislature, as the Biological Survey wishes these birds protected on account of their eating destructive caterpillars.

Mr. Bryan. To the northwest of us is an island bird reservation where no collecting of eggs or nests is allowed. We are attempting to protect bird life in every way, and hope that it will be perpetuated here so that scientists may study the birds and that the birds themselves may be given an opportunity to recoup themselves.

The Chairman. We are glad to hear so many experiences on this interesting subject, but must now turn to another topic, namely, that of nature trails.

We will now adjourn to the banquet room at the opposite end of the lanai, where Mr. Ansel F. Hall will deliver an illustrated lecture on the Yellowstone nature trails: "Nature trails; an experiment in elementary science, recreation, and education."

Mr. Hall. A few minutes ago Mr. Hamlin told us how the "trailside museum" and nature trails were being developed in Palisades Interstate Park, and I wish to continue this subject by showing you a few pictures of what was accomplished in these respects during the past season in Yellowstone National Park. This, our initial experiment in nature trails, has proved that they are a great educational possibility. We have found them to be one of the cheapest and most efficient ways of reaching our public effectively, and I look forward to the development of both nature trails and trailside museums in all of our national parks.

The principle of the nature trail is a very simple one. Doctor Lutz has struck the keynote by placing at the beginning of his trail in Palisades Interstate Park a sign reading "A friend who knows something of natural history is taking this walk with you." The idea of preparing labels is not merely to identify trees and flowers. but to stimulate the interest of the visitor by asking him questions or giving but a few interesting facts which lead him to seek for others. When the technical names are used, they are usually given last. We find it best, in so far as possible, to let the visitor discover for himself the interesting features of the trailside, and it is our aim to help him to interpret these correctly.

(After Mr. Hall showed pictures of the Yellowstone nature trail the meeting adjourned.)

## *Thursday Morning, April 14, 1927*

*Topic: Recreation Administration*

*Richard T. Evans, presiding*

The session was called to order at 12 o'clock by the chairman, who said:

We have followed outdoor recreation from the school and municipal playgrounds up to the national parks. We think this has been the proper crescendo, because we of the Park Service consider the national parks as affording the maximum of outdoor recreational opportunities. The National Park Service was created as a bureau in 1916, only 11 years ago, and since that time it has grown by leaps and bounds. Nearly every year has witnessed an increase of from 10 to 30 per cent in the number of visitors. Hawaii National Park, which is the most western one, has shared in that increased interest and it is hoped that it always will. Many persons on the mainland have acquired the national park habit and there is no reason why it should not be continued here. When the bureau was created, Mr. Stephen T. Mather was put in charge, and since he has excercised administrative control during the succeeding 11 years, it can be said that what the parks are to-day in attractiveness and general facilities is due to him. Mr. Mather will now tell us about the administration of these parks.

## *ADMINISTRATION OF THE NATIONAL PARKS OF THE UNITED STATES*

*By Stephen T. Mather*

As Mr. Evans has said, we began to function as an organization in 1916 when the National Park Service was created. Two years before that time I had charge of the national parks, but there was no definite organization to carry on the work. I had come in under my old friend, Franklin K. Lane, Secretary of the Interior, and we were

handling the parks as an adjunct to the Secretary's office. In 1915 I actually began the care of the parks, but there was no real machinery to work with. Another act was passed by Congress in 1916, but we did not get any appropriation until the following year. My appointment as director is exactly 10 years old next month.

The Park Service was organized in 1917, starting with a small office force at fixed salaries on a very small scale. Although the director's salary was $4,500, those under him who did the real work only received about $2,000 per year. When the war began and so many war bureaus were organized, we found it hard to get men at these low salaries. However, our forces were gradually built up and interest in the development of parks increased until now, I am happy to say, from the Secretary of the Interior and Congress down to our superintendents and rangers, we get the very finest support, both in a financial and administrative way. We are fortunate in having in the lower House of Congress a man devoted to the interest of the national parks, Hon. Louis C. Cramton, of the Appropriations Committee, who has personally visited all the parks and has even discussed details with the superintendents. It is a great advantage to have one man handle our appropriations year after year. Our work has increased so rapidly, particularly since we have taken up road-building activities, that every detail must be checked up in our Washington office and for this we have an accounting department.

Our publications are now coming to be very important. We get out a number of booklets, one of each park, for free distribution. Park reports, road maps, and diagrams are also printed. In addition to these we have a number of publications which we sell at nominal cost. I have with me one copy of our National Parks Portfolio, which was the first to stimulate public interest. Funds for the first issue were furnished by railway companies. We have here for distribution a list of all our free publications, which will give you a good idea of our areas, which include 19 parks and some 30 monuments.

We have in the Park Service a landscape engineering department which we consider a very vital factor in helping to preserve and protect our scenery in its original condition. Roads and hotels must be built and considerable construction must go on. Through efforts made very soon after the organization of the service, we secured the right to have a landscape engineer, and in this way were able to keep up with our landscape problems. Before that time trees had been cut and buildings put up in a rather haphazard way, but all this has been changed. Wood cutting is now all done under supervision, and the selection of timber for building construction is directed by our men with as little damage as possible. In building roads, it was very important that they be constructed in such manner as to harmonize with the scenery and not become an eyesore. Our

landscape engineering men have even removed telegraph wires and poles which detracted from the beauty of the scenery.

When Congress gave us two and one-half million a year for road building, we decided to turn the road work over to the Bureau of Public Roads in the Department of Agriculture. The general plan is in our hands, but they undertake the work and we have found this arrangement most satisfactory. I have always been a believer in cooperative work among the bureaus in Washington where the tendency is often to build up the bureaus and make them independent. Through cooperation we get the work done by experts at a minimum of expense. We also secured the cooperation of the Bureau of Entomology to help us with the problem of insects that were attacking our forests.

Automobile travel began to bring in people to our parks in enormous numbers, as soon as they realized the possibilities of these places for vacations, and indiscriminate camping resulted. So we turned to the Public Health Service to settle the problem of sanitation. The leading sanitary engineer of the service has done wonderful work for us, particularly in the Yellowstone. All this has cost hundreds of thousands of dollars. Streams that had become polluted were made entirely pure. The sewage disposal systems in the Yellowstone and the Grand Canyon are now the finest in the country. The wilderness is a wonderfully healthy place, but when you get crowds of people coming in and camping it becomes something of a problem. This cooperation with the Public Health Service has been of tremendous value to us. Despite the crowds that visit Yosemite Valley, the Merced River is entirely free from pollution. At one time, this was a very serious problem and we had to put the question up to Congress, showing that it was absolutely necessary to spend hundreds of thousands of dollars in order to prevent typhoid and similar diseases.

The Forest Service has also given us cooperation. It is our aim to preserve timber and only cut it for fuel or buildings. We want to keep all areas as nearly as possible in their natural condition.

The real work of the administration of the parks devolves on the superintendents, who have been selected because of their ability to handle their respective jobs. There are many more problems on the mainland than here in Hawaii—the question of wild-game protection, for instance. We would have no elk to-day if they had not been preserved in our parks. In Yellowstone Park we have the greatest buffalo herd in the United States. There is one herd of about 1,000, which has to be fed on hay during the winter; another herd, which is wild, very few people ever see. The greatest problem which the superintendents have to solve is whether the wild animals or the tourists deserve the most consideration. Then there is a considerable work to be done in the parks in order to get them ready for

the summer season—roads to be cleared of snow, camps and hotels to be made ready, and a force of park rangers instructed in their duties. And these men must be given to understand that their first duty is service to the public. One of the most interesting activities is the handling of tourist travel in the large camps. About 75 per cent of those who visit the parks come in automobiles and their care is the most vital part of our work. Most of the camping areas are provided with cafeterias, laundries, comfort stations, etc. Firewood is prepared for them and all facilities must be kept in good shape Those who camp out get a great deal more enjoyment than the tourist who goes through the park in a bus in four or five days.

I must also say a word about our educational opportunities in the parks, of which Mr. Hall has already given you the details. We all feel that this is a very important line of work and in our museums



MODEL: BIG SEQUOIA TREE

we have high-class men who know the birds, trees, and flowers. It is surprising to find out how especially eager children are about these things. We find that children who are taken very young on camping trips always want to come again, and never forget the experience.

In conclusion, let me say that service to the people is the keynote of all our work in the national parks and here the people come in touch with their Government more than in any other department, unless it be the Post Office. The only thing I can take any credit for is that I have been able to get the type of men into this service who do not work for salary; in fact, they could make much more at other things. The superintendents have all made good in very remarkable ways, and we have been very fortunate in getting the right type of men for these positions.

*Discussion*

The CHAIRMAN. Mr. Mather's dominating idea has been cooperation and he has the knack of getting it whether it be from a corporation or the most obscure individual. This has led to the policy of almost guaranteeing to each visitor that he will receive full value both in time and money. As long as questions have already been invited I will offer the opportunity of asking questions of Mr. Mather.

Mr. HOUGHTON. Yesterday we became rather gloomy about the future of our plants and birds. This thought came to me: Mr. Mather says that there is a Member of Congress who is personally interested in the parks and secures the appropriations. Why could not men be found in the State legislatures to take the same interest? The legislatures have to be educated and I believe that this could be done. I make this merely as a suggestion. I should like, also, to ask Mr. Mather about what provision is made for the campers who wish to go with a pack train or a pack horse?

Mr. MATHER. It isn't everyone who can go into out-of-the-way places unless he has the ability to take care of himself in the wilderness. But there is a great deal of this sort of camping being done by small groups, and by large groups, such as the Sierra Club in California. We encourage the idea, and in many places special provision is made for pack-horse trips, either short or long. In one park some 800 horses are kept for this purpose. In the Yosemite, special camps have been provided for hikers. These camps are fully equipped so that it is not necessary to take a pack train.

Mr. EHRHORN. I should like to ask Mr. Mather about the regulations regarding the scientific collection of specimens.

Mr. MATHER. All the scientist has to do is to present his credentials to the park superintendent and a permit will be issued to him. There is no difficulty about securing specimens of the smaller wild life, but in the case of large animals we have to discriminate. We are always glad to cooperate with scientists.

Doctor MIYOSHI. I should like to say to Mr. Mather that I appreciate his administration of the national parks in the United States. It is very important that wild life should be protected for the sake of science. Last night we saw some pictures of the parks and I saw some bears in them. Are these bears becoming rare?

Mr. MATHER. No; the tourist actually has to be protected by regulations against becoming too familiar with the bears, which are coming down into the parks in increasing numbers. There is no killing of bears in the parks, unless they become unruly and break in where food is stored and make themselves nuisances.

Mr. POWLISON. I wish to commend the splendid service in the parks; the type of men who go into it; and the fact that it is not

connected with politics. The same conditions hold for the playgrounds. The importance of getting children to appreciate their own environment is a matter that requires consideration; out of 4,000 children whom we took up to Punchbowl, 80 per cent had never been there before.

The CHAIRMAN. I should like to refer to the written questions which will be collected at the end of this session. We will now hear from Dr. Sazo Ujihara.

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## *INVESTIGATIONS FOR THE SELECTION OF A SITE FOR A NATIONAL PARK IN JAPAN*

*By Sazo Ujihara*

*Expert of the Home Department, Sanitary Bureau, Japan*

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### I. INTRODUCTORY REMARKS

Japan has been called the world's paradise. It stretches from the Torrid Zone to the subfrigid, as it extends from the southern extremity of Taiwan (Formosa) Island which lies 21 degrees 45 minutes north of the Equator to the northern end of Araito Island in the Kuriles Group, the latitude of which is 51 degrees 56 minutes. As Japan proper itself extends from the south end of Kyushu to the north end of Hokkaido, it is full of changes in climate and weather, but a greater part of it is, on the whole, of mild climate and fertile vegetation. The numerous indentations of the coast line afford many good harbors and fine views. The mountains, Fuji among them, are in the main island centered in the range known as the Japan Alps, and are rich in scenery which combines the beauties of mountain and river. The mountain lakes which are to be found in various spots still retain in their dark-blue water the sanctity of ancient times. Though there are people who have pronounced the country to be as beautiful as a picture, the appearance of the Island Empire of Japan is even more charming than a picture and the whole country is a natural park. Nature's own paradise ground. This variable beauty of Japan has such charms as are almost beyond the imagination of the continental peoples.

The Japanese people who have grown up in this beautiful country have an intense love for the beauties of nature; from old times when shrines and temples were built, fine views were always included in the grounds surrounding them, and the residences of all classes of the nation, from the princes and high nobles down to the common people, had gardens laid out in miniature imitation of natural scenery. There are even now famous gardens of historic interest which retain their appearance of over a thousand years ago, and not a few of them have aroused the high admiration of foreign tourists.

And yet the idea that the natural scenery which has remained unchanged from ancient times should be inclosed within a great national park and used for the preservation of national health is of quite recent origin, not more than ten-odd years ago, and came to the fore certainly since the formation of national parks in the United States, Canada, Switzerland, Italy, and Germany.

## II. INVESTIGATIONS RESPECTING A NATIONAL PARK AND SITES PROPOSED THEREFOR

In accordance with the administrative system in Japan, the control of the parks lying within and without cities is, on the ground that they were established for the furtherance of the health and recreation of the nation, held by the sanitary bureau of the home department, and the national park, as its formation is even in a wider sense to be attributed to a desire to further the health of the nation, will also be under the administration of the sanitary bureau. The natural monuments are, however, under the control of the geographical bureau of the same department.

It was in 1920 that the necessity of making investigations respecting the opening of a national park in Japan was brought forward. The Government authorities took definite steps in the matter by appointing a special investigation committee in the sanitary bureau of the home department.

Fortunately, places noted for their beauty are in Japan preserved as national or Government properties or under the ownership of shrines or temples and the principal parts of the views have been kept intact. And even in cases where these places are not such properties or under such ownership, but being of great extent spread over several prefectures, the principal parts are either protection forests or are under protection as lands preserved as places of historic interest and natural beauty. All that is now needed is to investigate and decide within what limits these picturesque views and individual historic, geographical, and natural monuments should be included and how they should be connected by organs of communication. But Japan differs from the American continent and other countries with extensive tracts of unreclaimed land in that when large tracts are to be taken in they would include many private grounds. It would therefore be most difficult for the Government to purchase these lands entirely with the national fund and create a great national park. Accordingly, the Government authorities have under consideration, and have not yet come to a definite decision, the question whether the home department should merely decide upon the limits of the park and indicate the principal communication system and other matters within such limits, restrict and control to a suitable degree the preservation of famous localities within the park,

and delegate the management and supervision to the local corporations or a part thereof to private juridical persons, or whether it should take State-owned land as the principal part and set to work at once upon parts that may be expected to be immediately worked upon.

After careful consideration of distribution and use of the localities suitable for the national park, the sanitary bureau of the home department selected 16 places which it considers the most suitable in the whole country and has since 1921 been carrying on thorough investigations. The following table gives each of these places of beautiful scenery, from which it is proposed to select the center of the park, its locality, the year of investigation, and the principal features of such place:

| Central place of scenery | Locality | Year of investigation | Principal features |
|---|---|---|---|
| Kamikochi | Nagano Prefecture | 1921 | Center of Japan Alps Range; beautiful scenery, virgin forests, lakes, clear streams, hot springs; summer resort. |
| Mount Hakuba | do | 1921 | Representative mountain of north Japan Alps Range; hot springs; place for mountain ascent. |
| Nikko | Tochigi and Gunma Prefectures. | 1921 | Mountain, virgin forests, lakes, waterfalls, historic grounds, beautiful excursion spots; summer resort; hot springs. |
| Unzen-ga-take | Nagasaki Prefecture | 1921 | Small volcano of Shimabara Peninsula; hot springs; summer and winter resort, with magnificent views of the sea. |
| Mount Aso | Kumamoto Prefecture | 1921 | Active volcano; largest outer crater walls in the world; splendid view of nearly all Kyushu and surrounding seas; hot springs. |
| Mount Fuji | Yamanashi and Shizuoka Prefectures. | 1922 | Most famous mountain of Japan; in the center, eight lakes of Fuji; primeval forests, mountain ascent: summer and winter resort. |
| Mount Odai-ga-hara | Nara and Miye Prefectures. | 1922 | Center of Yamato Alps; virgin forests, mountain ascent, fine mountain views. |
| Mount Bandai | Fukushima and Yamagata Prefectures. | 1922 | Mount Bandai volcano; hot springs, Lake Inawashiro; summer resort with beautiful views. |
| Lake Akanko | Hokkaido | 1923 | Lake, primeval forests, beautiful views all around; active volcano. |
| Mount Kirishima | Kagoshima and Miyazaki Prefectures. | 1923 | Mythological mountain; volcano, hot springs, azaleas, deep forests, mountain ascent; magnificent views. |
| Shodo Island | Kagawa Prefecture | 1924 | Island of Inland Sea; picturesque views of Inland Sea, with scenery of Kankakei in the center. |
| Daisen | Tottori Prefecture | 1924 | High mountain of Japanese coast; mountain ascent, magnificent views. |
| Lake Towada | Aomori and Akita Prefectures. | 1925 | Fine scenery at north end of Japan's main island; lakes, surrounding mountains, deep forests, mountain plants, mountain streams, waterfalls, hot springs; summer resort. |
| Tateyama | Toyama Prefecture | 1925 | Mountain on the north end of the west coast of Japan Alps; mountain ascent, skiing, perpetual snows, hot springs; magnificent views, ravines. |
| Onuma | Hokkaido | (1) | Lake and islets of Onuma Park; primeval forests on lake shore, view of Komagadake volcano; summer resort; picturesque views. |
| Noboribetsu | do | (1) | Volcano; high-temperature springs with enormous outflow; full of beautiful views on all sides; lake, primeval forests. |

[1] Investigation not completed.

Such are the places selected and still under investigation by the sanitary bureau of the home department. They are all noted for their remarkable beauty, and, besides being natural and historic memorials, possess hot springs and serve as health, summer, and winter resorts. The peculiar scenery of Japan possesses such natural beauty as is beyond comparison with that of Switzerland and Italy. No one who has entered this fairyland can help being struck with admiration.

### III. PUBLIC OPINION ON THE OPENING OF THE NATIONAL PARK

The first time that the idea of a national park appeared in the Imperial Diet was in its twenty-eighth session (1911), when a proposal was made in the House of Representatives for the establishment of a great park with Nikko as its center. Subsequently one proposal was made in the same house during the forty-fourth session (1920), 6 proposals were brought forward during the following session (1921), 27 during the forty-sixth (1922), 1 in the forty-ninth (1924), 15 and 17, respectively, in the fiftieth (1924) and fifty-first (1925), and several appeared in the fifty-second; that is, in the present year in the lower House. These proposals serve to show how eager the country people are now for the planning of a great park. Though from considerations of the national finance it has not yet been possible to bring them to realization, it is believed that the conditions are such that a definite plan must in the course of time be obtained.

The local authorities have been so influenced by the opinions of the people under their jurisdiction that they are in their respective prefectures making definite investigations concerning the planning of great natural parks and taking steps for the preservation and opening of places noted for their scenery. It is sincerely hoped that we shall be able as soon as possible to present a great center of natural beauty in this terrestrial paradise for the wonder and admiration of the whole world.

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### *Discussion*

The CHAIRMAN. In line with the difficulties which Japan is having might be mentioned the two parks that we are trying to create in the States of Virginia and Tennessee. Congress has authorized the establishment of these parks, but the areas are privately owned and the the States will have to secure title to the lands and present it to the Federal Government. One thought that comes to me from Japan is the fact that they set aside small areas, such as a single tree, even though it is on private property. That is going further than the United States has gone so far. Perhaps Mrs. Fullard-Leo would like to add to the subject of parks in Japan.

Mrs. Fullard-Leo. It is the extreme cooperation between the people and the Government in Japan that is remarkable. The Japanese are great lovers of nature, and in the springtime you will see excursions of people going to view the cherry blossoms all over the country. They do not cut down their cherry trees, nor do they raise the cherry trees for fruit.

The Chairman. I received word recently that the cherry trees in Washington blossomed this year on March 27, which is a little earlier than usual. Dr. Keiji Uyehara, president of the Japanese Landscape Architectural Society, will now address us on the subject of national park problems in Japan.

Doctor Uyehara. Before reading my paper, I wish to say that I visited Secretary Work and Mr. Mather in Washington, in 1923, and asked them about holding an international conference on matters pertaining to national parks, etc. They expressed the hope that such a conference would eventually materialize. They offered to help me in any way. In 1923 I met Mr. Mather again at the Yellowstone Park, and I was very much impressed with his work. I could not forget him. Last December I received a letter from Washington expressing the hope that Japan would send representatives to this conference, and I was deeply struck with the message. In Japan, let me add that the Government bureaus cooperate with each other, as they do in the United States.

## *NATURE PRESERVATION AND NATIONAL PARK PROBLEMS IN JAPAN*

*By Keiji Uyehara*

*President of the Japanese Landscape Architectural Society*

Nature preservation in Japan was neglected for a long time. It was not until 1919 that there was any activity in this field. The first nature preservation law, created in 1919 by the Department of Home Affairs, set aside several regions for preservation, but not for national park purposes, and they were indifferently managed by an ineffective force. The national park movement was inaugurated not so long ago. These two movements, which influence the promotion of nature study, national health, and outdoor recreation, must be recognized as important activities in our modern civilization.

Japan was rather slow in taking up the problem of nature preservation, confidently believing that the natural beauty of its vast stretches of country was inexhaustible, and indestructible even by the savagery of civilization.

The first national park proposal to the Imperial Diet was made at least 16 years ago (1911). Recent proposals for the setting aside of such parks have totaled 80, during the period from the forty-fifth to the fifty-second session (1927) of our House of Representatives. These proposed park sites and acreages cover almost all of our country regions of national beauty, historic interest or special note. They would make all Japan a park, I might say. This movement was given great impetus in 1920 and 1921, at which time I went to America to study similar systems there.

In establishing the national park, three purposes should prevail—recreation, education, and nature preservation. Neither one of these should dominate to the exclusion of the others. They should be regarded as cooperative purposes in this field of work.

We must not permit the deterioration of nature, nor await the time when beauty of scene becomes spoiled through being devoted to recreational life only. Even though the vital need for such recreation be recognized as a dominant one in our civic life, it must not be made so at the expense of natural beauty. On the other hand, world-famed regions which are suitable for national parks should be open to the public for recreation. This use of nature in modern city life is being sought more and more eagerly and used more extensively than ever before. It has become an indispensable factor, yet it has never been submitted to systematic analysis to determine its proper relationship to other factors, or its best means of development. The same is true of the scope of nature viewed from the standpoint of education.

In solving such questions as these, which will arise from an analysis of the highest uses to which nature may be put, there will be some differences in the various countries. These differences in solving the problem will depend upon differences in nationality, culture, civic life, customs and manners, general ideas as to nature, climate, transportation facilities, etc.

There are two great dangers to be recognized. One lies in the increasing numbers of people who go mountaineering, particularly in summer time, without any idea of the value of nature, and without using foresight regarding its preservation. The other danger lies in the growing unreasonable demand for economic uses of nature—water power, road cutting, deforestation, and home industry in some places. It is certain that we are approaching a time when we shall no longer be in a position to destroy natural beauties, for there will be no more beauty left to destroy. People should wake up to the fact that something has to be done before it is too late.

We must now establish system and organization in nature protection, and carefully make plans and arrangements for the work. Of course, in recent years, some attempts have been made by various

local authorities with private cooperation, and with such facilities as were available, but not by the Government. Now the Government should systematize and coordinate the work.

The real meaning of the term "national park" is interpreted differently in every country. In Switzerland, although both this term and that of "Naturschutzpark" are used, there is no recreational meaning included. For instance, at Unter Engaden people are excluded from all use of nature in the park there. In Germany they use the term "Naturgebiet" or "Naturschutzgebiet," and "national park" is not used.

In Japan we do not yet have such parks, but as the term has been introduced and circulated widely, we must define an adequate meaning from the standpoint of our own conditions. This is difficult to do, but must be accomplshed, as there exists much misunderstanding concerning it, even among cultured classes of people. This definition should not be confined closely within the idea of recreation only.

It may be seen from the foregoing that an idea concerning the real spirit of the national park needs to be stimulated in Japan.

In this conception of the park there are two elements to be considered—one from the point of view of public activities, and one of governmental activities. In other words, one a "nation's park for recreation proper"; the other, "nature preservation for scientific research and enjoyment, and, moreover, for the educational effect of nature study upon the present and the coming generation"; both of which need Federal efforts. Of these two, under present circumstances, the latter seems preferable to the former, I think; but they should be made to cooperate perfectly in the future Japanese national park.

Our Government and responsible local authorities should compose the differences between these two contrary phases—the destruction which grows out of recreational use, and preservation for research and enjoyment.

The Japanese Government gives us three bureaus for park management. First, the city-park control, under the city-planning act, belongs to the city-planning bureau of the department of home affairs. Second, provincial, prefectural and local parks come under the sanitary bureau of the same department. Third, regions set aside for nature protection, "naturschutzgebiet" (not strictly parks), come under the bureau of domain of the same department.

Our Government recognizes definitely the necessity for such park systems and public organization, but the national fund available for this purpose is not sufficient under present financial conditions. Natural beauty, however, may be considered as capital and utilities, and visiting guests to park preserves may be regarded as the interest on the capital.

It is sincerely hoped that such a system can be built up, whereby the exact uses of parks may be defined, and such intensive uses of nature developed as we have not heretofore known. This may be brought about, we trust, by concerted action, the cordial help of Government efforts, favorable public sentiment, and the aid of the United States of America, "pioneer of the park movement" as Dr. John J. Tigert has said.

Bryant said: "To him who in the love of nature holds communion with her visible forms, she speaks various languages."

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*Discussion*

A MEMBER. Where will the first national park in Japan be created?

Doctor UYEHARA. I can not say definitely now, but it is possible that the first national park to be created in Japan will be Mount Fuji. It can be visited in any season; it is famous for its beauty; and covers a wide area around its base where some natural monuments will be found.

Doctor MIYOSHI. We have many places of scenic beauty and historical remains in Japan which have been proposed for national parks. The beginning is not easy, but we are making investigations and we hope to have a number of national parks.

Mr. HOUGHTON. I think Japan has some problems that we do not have because of her congested population. We are fortunate in having larger areas, but I think Japan is to be congratulated for the work she has been doing. Doctor Uyehara emphasized "recreation, education, and conservation." I would change the order and put education first. You have to educate people to the advantages of recreation and then conservation necessarily follows.

Mr. EHRHORN. I should like to ask if there is any vandalism in Japan, and to what extent?

Doctor HARADA. Doctor Uyehara was telling me that there was some destruction of timber.

Mr. EHRHORN. What action does your Government take to protect your parks and monuments.

Doctor MIYOSHI. We have no national parks yet.

Mr. JUDD. It seems to me that the chief benefits of a conference are the ideas that we receive from other countries. I have been thinking seriously of this idea of setting aside small areas of natural or historic interest. We have many such places here, such as the sites of the old Hawaiian temples, or heiaus, and the Pali, where Kamehameha drove the enemy's army over the cliff. These sites should be protected; also some of the old Hawaiian trees.

Mr. HALL. I heartily agree with what Mr. Judd has said and I should like to see the idea extended to the entire country. I should like to suggest the drawing up of a resolution favoring the idea of the setting aside of natural monuments and that a committee be formed for that purpose.

Dr. MIYOSHI. I beg to inform you that in Japan we set aside not only natural monuments, but also preserve those of historic and scenic beauty where people can go and admire them. In this respect we may be said to have "national parks."

The CHAIRMAN. I will bring this matter to the attention of the resolutions committee.

Mr. JUDD. Are there not already national monuments on the mainland?

Mr. MATHER. It is the policy not to increase the number of national monuments; in fact, some of them should be turned back to the States for them to take care of, as Mr. Judd suggests should be done by the Territory here. We have set aside these monuments in some cases where the State did not realize its duty, or where if they had not been preserved, they would have been lost. But it is possible for these small areas to be handled by the States, or the Territory.

Mrs. FULLARD-LEO. There is a country of great interest which is not represented here; that is, the Dutch East Indies. Java has a large number of areas set aside for parks and it preserves its places of scenic and historic interest. The botanical gardens there are too well known to be described by me. The old temples were lost until rediscovered by the Dutch and they have been the mecca of archeologists ever since. The Dutch Government is doing a great work in preserving these ancient temples which link up with the glorious past.

The CHAIRMAN. Mr. Hall has some announcements to make [announcements regarding the trip to Hilo and Kilauea Volcano on the island of Hawaii]. Mr. R. E. Boardman, of the Playground Association of Victoria, and Tree Planter's Association of Victoria, Australia, will deliver an illustrated lecture on "Australian National Parks and Their Administration."

(Mr. Boardman showed some lantern slides, but on account of illness did not deliver a formal address.)

Adjournment.

## *Thursday, April 14, 1927*

*Topic: General Discussion and Review of Conclusions Reached During This Conference*

*Stephen T. Mather, Presiding*

During this meeting a number of topics were considered and resolutions were drawn up for presentation to the general resolutions committee of the conference.

After a discussion on trails, the Hawaiian Trail and Mountain Club offered the following summary relative to the promotion of hiking in natural areas:

Accomplished by—

1. Establishment of trail systems, accessible only to hikers.

2. Provision of pocket maps, showing trail locations, etc. Scale suggested about 1 inch to 1 mile.

3. Placing of adequate signs indicating: (*a*) Accurate mileage, trail directions, and elevations; (*b*) springs in country where water is scarce; (*c*) shelter; (*d*) swimming or bathing places; and (*e*) radial indicators on peaks, showing locations of air-line distances to surrounding points.

There was considerable discussion relative to the advisability of all Pacific nations being eligible to compete in the Pan Pacific games, and the unanimous opinion of the delegates present was expressed in the form of a resolution.

Mrs. E. Fullard-Leo and Mr. Powlison asked the delegates present to what extent their Governments aided organized athletics. A Japanese delegate replied that Japan assisted to the amount of $13,000 in 1924 and that this assistance is continued. The point was brought out that the United States Government not only fails to assist in both local and international athletics but collects a 10 per cent tax from contributions made by private individuals for carrying on athletic work, as well as a 10 per cent tax on all gate receipts to both professional and amateur contests.

Japan's preservation of natural monuments was further discussed and resulted in a resolution commending similar action to all nations represented at this conference.

The importance of studying nature in place was again discussed and a resolution drawn up expressing the unanimous opinion of the recreation section in this respect.

The importation of exotic plants and animals was discussed by Mr. Judd, Mr. Ehrhorn, Mr. Teague, and several other delegates, and it was the sense of the meeting that the importation of exotic species should be prohibited except under stringent regulations.

Secretary Hubert Work visited the meetings and delivered a short address pronouncing the conference to be a splendid success.

A suggestion was made by Miss Bertha Metzger that summer courses in the national parks be not limited to nature subjects, but also include art, English, and other culture courses, the idea being that universities should be willing to offer their summer session courses in the parks as well as on the respective campuses.

The matter of supervision of playground activities was discussed to some extent, and it was the opinion of the recreation section that supervised play should be encouraged.

Resolutions upon the following subjects were drawn up for presentation to the general resolution committee of the conference:

1. That the Pan Pacific Conference has demonstrated the value of continuing such meetings, either annually or biennially.

2. That all countries bordering on the Pacific should be eligible to compete in the Pan Pacific games.

3. That amateur athletic contests should be considered as educational and, therefore, should be exempted from Government taxation.

4. That playgrounds and play activities should be supervised.

5. That all Governments participating in this conference should be urged to preserve natural and historical monuments.

6. That exotic plants and animals should be excluded from a country unless admitted under rigid regulations based upon a scientific study of existing conditions.

7. That there should be closer cooperation between the museums of all countries participating in this conference in the matter of exchange of personnel, research students, information, publications, exhibits and research material, and cooperation in exploration and scientific research.

After expressing great satisfaction at the success of the conference and appreciation for the hospitality of the people of the Hawaiian Islands, Mr. Mather declared the meeting adjourned.

NOTE.—The following paper was delivered before the members of the entire conference assembled at Volcano House in Hawaii National Park on the evening of April 18:

# THE OPPORTUNITY FOR SCIENTIFIC RESEARCH IN THE NATIONAL PARKS OF AMERICA

*By T. A. Jaggar*

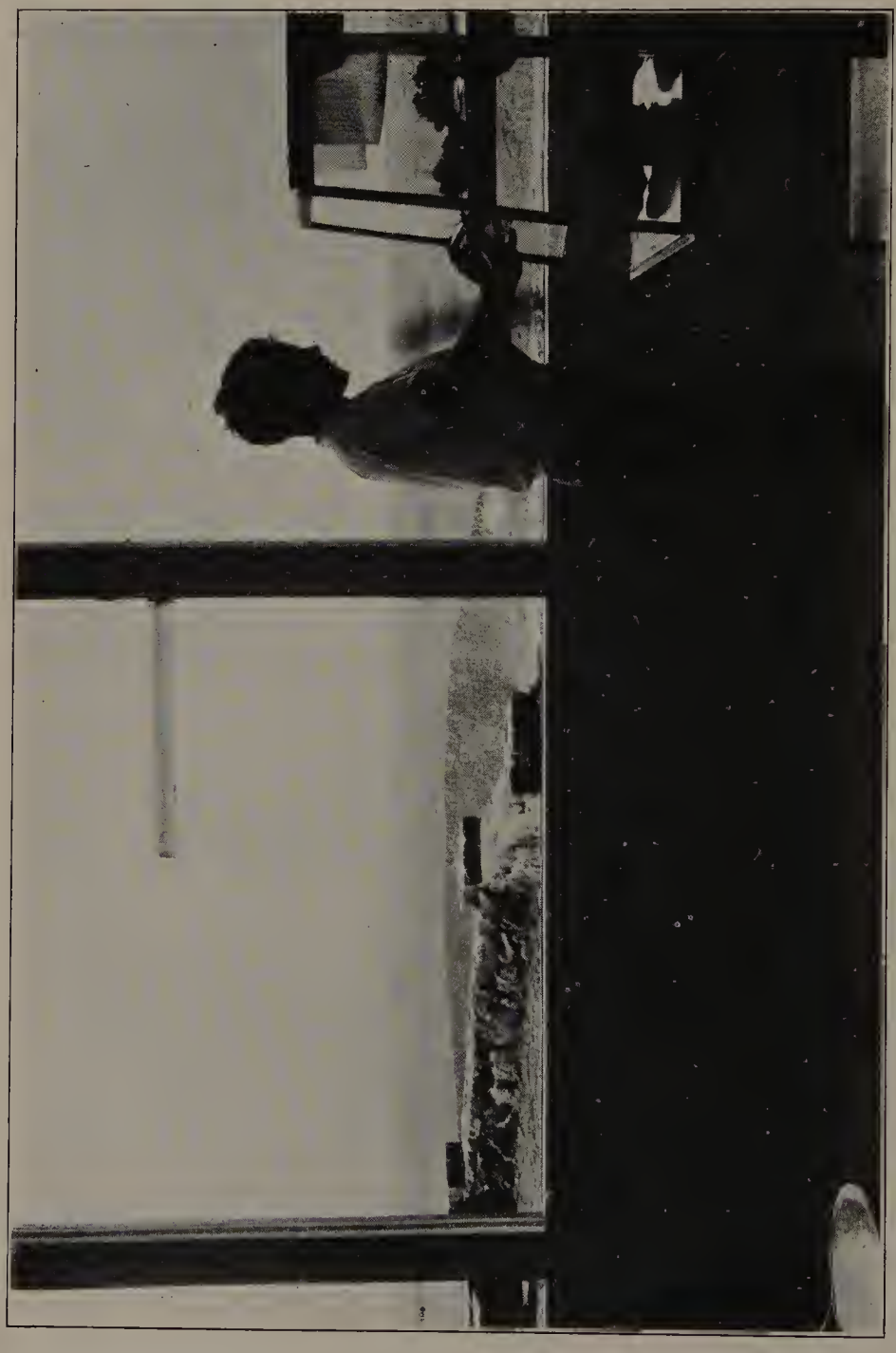
*Director of Hawaiian Volcano Observatory in Kilauea National Park*

National parks have become creations of government in many countries, and their use by the people is primarily for studying nature and recreation in the wilds. Accordingly, men of science are taking an increasing interest in these sanctuaries of wild life and of human antiquities. Being national, they have the advantage of permanency. Museums have developed in these places in order to preserve indoors specimens of those things which admit of collection and exhibition, and even outdoors there is being developed in American national parks what are called "trailside museums," so that travelers under competent guidance may be shown, while they are walking or riding to places of interest, the birds and flowers and minerals and fossils that are characteristic of those wonderful places. Therefore, the purpose of national park museums is to extend both education and recreation in the service of large numbers of travelers, and when it comes to research or investigation of the wonders in question, what has hitherto been done has been the work of scientific bureaus of the Government or private research establishments.

My interest in this subject is limited to my own field of geology. Much might be told you of the opportunity the National Parks present for the study of other branches of natural history. Moreover, there are many divisions of geology, but I am interested in an opportunity which our parks now have that is not being fostered as it should be. It so happens that at Kilauea we have been delving into one of the most elementrary topics of geology; namely, the recording from year to year of the changes in life of the earth, considering the globe as a living being. In Hawaii there is a rare opportunity for this, because the volcanoes here are continually breathing with the earth, and also forming new skin on the surface of the earth when the mighty lava flows pour forth. It seemed worthwhile 25 years ago, when 30,000 people were suddenly killed by the volcanoes Pelee and Soufriere in the West Indies, to find out what happened during the months and years preceding such a catastrophe, in order to learn whether the earth, like any other living being, does not exhibit symptoms of the coming trouble.

It is the purpose of the Hawaiian Volcano Observatory to study just such symptoms, and the results of 15 years of work here have

developed increasing enthusiasm in the workers, for they have learned of tides and cycles, of tremor, temperature change, rising and falling of the ground, tilting of the ground, earthquakes, and outpourings of lava which are all related to each other and to the live movements of



UWEKAHUNA OBSERVATORY OVERLOOKING KILAUEA CRATER
(FILM PASTED ON WINDOW CONTAINS SEISMOGRAPH RECORD OF EARTHQUAKES)

the crust of the earth. It is this observatory method which seems to me lacking among possible researches that can be extended in geology so as to include such processes as the lifting up of the mountains, the breaking down of the lands under the action of the weather,

and the settling of the rubbish in hollows, which geologists call sedimentation. There are no places on the face of the earth so fertile in possibilities for this kind of study as the national parks.

The application of the observatory method to earth processes promises exceptionally good results in the national parks of the United States because of the great variety of natural laboratories scattered from the Arctic to the Tropics. In Mount McKinley National Park there is the highest mountain mass in North America, standing at the end of a graded series of mountains which extends in a marvelous smoothly curved line out to little volcanic isles in the Aleutian chain. Along that line lies Katmai National Monument, scene of one of the biggest and most extraordinary volcanic eruptions of this century. At Rainier National Park there is a combination of a warm volcano and mighty glaciers. At Glacier National Park there are wonderful overthrust faults, more glaciers, and a typical development of Rocky Mountain uplift. At Crater Lake and Lassen Volcanic National Parks there are continental volcanoes still partially active, typical of many score such cones that extend the length of the Cascade Range and of the Andes. In the Yellowstone there is the greatest geyser district in the world, adjacent to an earthquake district in Montana which was recently in motion. At Zion and the Grand Canyon there is the profoundest river trenching on earth. At Hot Springs National Park there is a development of hot waters in the midst of a region remote from the big mountains, lose by the vast accumulations of sediment of the Mississippi flood plain, and possibly that shattered the Mississippi Valley in 1811.

Lastly, there is Hawaii National Park, where already research by the observatory method has begun, and where observation of the making of new rock is in progress. We treat the earth as though it were a mighty engineer constructing new lands just as our human engineers construct breakwaters and dams and concrete roads. And if you can imagine a scientific mongoose, along the road between here and Hilo, establishing an experiment station to find out why his habitat is invaded by floods of new concrete and stone, and then setting up measurements in order to discover where the concrete comes from and how it gets there, you will have an apt picture of the little volcanologists seated on the flank of Mauna Loa volcano.

There is thus a geographical opportunity, elsewhere unequaled, which the National Parks offer for the study of mountain erosion, of shore lines and sea bottoms, of rivers and glaciers, of uplift and shifting of the lands at times of earthquake, and of outpourings of slag from the inside of the earth to make new lands such as were created in great volume in the primitive days of the globe, when it was crusting over and congealing from an earlier ball of fire.

The proposed observatories group themselves naturally into four categories—those concerned, respectively, with (1) the making of new

rock, (2) the uplift of the land, (3) the rotting of the mountains, and (4) the settling of the rubbish.

*The making of new rock.*—The national reservations suited for observatories of this process are primarily Hawaii, Katmai, Lassen, and the Yellowstone. In Hawaii, Lassen, and Katmai new lava has appeared within the last 15 years. In Hawaii it has come forth at a dozen times and places. At Lassen in 1915 it appeared only as a sluggish paste rising like hot iron in the summit crater. At Katmai it appeared similarly as cracked cones of very siliceous slag inside the crater. About 200 years ago the Lassen country produced a lava flow of clinker quite like what the Hawaiians call "aa." These outpourings, whether liquid or paste, are accompanied by burning gas, and the study of this gas is precious for geophysics, because it shows us the chemical composition of the inside of the earth. If the spectroscope is applied to these outgivings of the earth, it will be possible to make direct comparison of the chemistry of the inside of the earth with the chemistry of the sun. Another kind of rock was made by all these volcanoes when they threw up sand and gravel and ash which accumulated in layers and valley fillings that some day will be compressed and hardened into such rocks as geologists call agglomerates and tuffs. Already the Geological Survey is at work establishing observatories at these places, and the significant results of the work to date are concerned with microscopic movements of the land unsuspected when the work was begun.

We have learned in Hawaii that Kilauea rises and falls by several feet in the course of 15 years, even at the solid ground outside of the crater where the Volcano House is built. We have learned that whenever the gushing lava returns to the pit, the observatory ground 2 miles away starts a continuous trembling. We have learned that when cracks open near the pit and sulphurous gas comes out, these cracks grow hotter and hotter until the red-hot lava appears. And lastly, we have found out that a sensitive pendulum shows a tilting of the ground away from the center of the island when the lava is rising, even before it appears as an eruption. And when the lava after an eruption goes down, the ground tilts enormously toward the center while it is retreating. Along with all this earthquakes occur, and we are coming to think that much of volcanism is an underground process, with much more of this lava flowing into cracks and crevices deep in the underearth than ever appears at the surface. This seems a connecting link between volcanism and such process as happened in California when the big earthquakes occurred at San Francisco and Santa Barbara. This leads us directly to the second of the processes that ought to be observed with more observatories.

*The uplift of the land.*—There are vague generalities about "tectonic" forces that geologists refer to when mountain making is the topic,

but they do not go and dwell in a tunnel inside the Rockies and set up instruments that they stay with for a lifetime. Yet is not the oscillation of Mount McKinley or Pikes Peak an index of the heartbeats of a continent? If the continent lifts, the surface tilts; if the continent shifts, the surface trembles; if lava rises, the waters heat; and if all these things are in progress, then our peak is higher and crooked at the end of five years. And all these things can be measured.

The Great Northern Railway is building the longest tunnel in America through the middle of the Cascade Range in Washington, between two of the greatest volcanoes in the United States, Rainier and Baker. It will be 7.78 miles long, it will pass 2,000 feet underneath the range, and it will cost over $12,000,000. President Ralph Budd has asked the volcanologic section of the Government to draw estimates for details of operation of an underground observatory adjacent to this tunnel. These have been furnished, and it is proposed that a staff of physicists and computers shall permanently live near the tunnel, that a side passage shall be excavated leading to a large underground laboratory electrically ventilated, heated, and lighted, and that the best instruments obtainable shall be installed for the study of level changes, earthquakes, tremors, underground temperature changes, earth tides and gravity changes, and earth currrents. More than all, such a station should become an institute of standards for such work.

It is such stations as this that the national parks are fitted for. There is Rainier Park, close by this place and in the Cascade Range. On the other side of Rainer, at Lassen Park, Mr. Finch, formerly of the Kilauea Observatory, is now running his little seismograph station in the snows of Lassen Volcano. But there is needed for the study of the uplift of the Alaskan Range, or the Cascades, or the Rockies the establishment by Government of a new type of experiment station, a mountain observatory, not for forest fires or weather or stars or sunshine, but literally for the "natural history" of mountains.

Rivers flow off, landslides fall, springs heat or chill, and the earth shakes or tilts, according as the mountains lift or lower. Considering the numbers of people who dwell in the hills, or flock to the hills, surely science should lift up her eyes unto the hills, that help may come to mankind.

*The rotting of the mountains.*—Mountains are suggested for geophysical work because the processes there are fast. The heaving up of the Mount St. Elias Range in Alaska in 1899 was so fast in September that the tremendous earthquake motions of Yakutat Bay shoved up the solid rock shore line 47 feet, where the Harriman expedition had made photographs the previous spring. This was measured fact. not guesswork.

Herein lies the romance of science for Alaska, the land of the west all unexplored, the tremendous glaciers making in places a real glacial period, the eternally frozen ground, the gigantic eruptions of the Valley of Ten Thousand Smokes, the rifted and shattered fjords of the southeast, and the earthquake messages that come out of the vasty deeps off the coast, described by the Coast Survey seismologist recently in the following words: "In the deeps off the Aleutian Islands we find the origins of probably more world-shaking earthquakes than in any other part of the world."

But this uplifting means another thing; namely, that the tops and sides of the mountains are rotting down all the time, falling by millions of tons, sliding to the oceans, being scoured by the glaciers, washed out, and crumbled by the rains, snows, and hot springs. The inside of the Alaskan mountains is hot, it is full of dissolving waters, a chemical laboratory.

And not only Alaska. Word has come from Queensland that whole farms have been sliding in many acres, with washouts and cracks and slips in the Nambour district. Fissures and creepings are reported everywhere. Whole banana fields have moved and hillsides have come down, tipping up the houses, and a mile of roadway is reported entirely gone. All of this happened January 26, three months ago.

In this the national parks can supply other work for our mountain observatory to do. Science must get standards for measurement of such processes as this rotting and sliding of the hills. At the time of the Katmai convulsion, call it what you will, one of the tremendous things that the eruption turned loose was a flowing of the land, the Mageik landslide, which broke down a mountain side and covered a great acreage of country. These things are sudden accelerations of otherwise slow processes but not too slow to measure. Here in Hawaii we had the same thing, the "mud flow" at Pahala, 20 miles from this Volcano House, in 1868.

What we need is the study of strategic places, with stakes and soil borings and surveyed measurements, and a working out of how fast the rock decays, how fast the water undermines, how fast the soil slips, and how fast and where do the rivers combine to carry off the products.

*The settling of the rubbish.*—Most people think of the Mississippi or the Amazon as a lot of water flowing down hill. In fact, it is nothing of the sort. It is chiefly a lot of mountain rubbish preventing the water from flowing down hill. Every time you read of an awful flood in India or China drowning hundreds of thousands of children and men, some of this preventing is being done.

A river basin is a place that is not understood. Engineers spend millions to prevent the preventing. They try to keep navigation open—which the mountain rubbish is preventing. They try to keep the water out of the towns and in the channel—which the mountain rubbish is preventing. They try to make bridges stand up the way the railway people did at Hilo a few years ago—which the mountain rubbish under the bridge piers prevented, by gently flowing into the bay.

John R. Freeman, in 1922, proposed to Congress the establishment of a national hydraulic laboratory, for the conduct of research, experiments, and scientific studies in connection with the problems of river hydraulics. For this he asked $200,000. In the hearing he made the following pregnant statement:

> The greater part of our recent progress in science and in the arts has been made by taking problems from outdoors into the laboratory, then coming back out of doors with the result, and working the theoretical and the practical side by side.

Mr. Freeman presented drawings illustrating the laboratory, quoted the Dresden River training laboratory and the hydraulic laboratories of the universities, and came to the conclusion that there ought to be a big national laboratory right at Washington on the Potomac. The design was the product of 10 years' work.

The project was opposed by the United States Army Engineers and the Mississippi River Commission, and Congress turned it down. The argument of the Mississippi Commission was that "the river is so gigantic in all its elements that a practicable model would be too small to duplicate the regimen of the river." The commission has kept scientific men on the river for 43 years in "nature's own laboratory, the river itself."

What the national parks could do in studying the great process of sedimentation, which affects 70,000,000 people in the Mississippi Valley alone, would be to combine the physical studies of the mountain observatory with geophysical studies at river observatories in those parks which are suitable. Neither the river engineers nor the physicist experimenters in hydrostatics can say the last word on rivers.

Rivers are not all water. They are repositories of mountain rubbish, fillings, plains, slime-fed flats from nature's stamp-mill, and they need the experimental geologist. All the limestones, slates, sandstones, oil shales, and conglomerates of geology have been built by rivers that flowed into mediterranean seas. The great lack of sound knowledge to-day is the lack of measurement of quantities, coarsenesses, materials, areas, bulks moved over river basins after the

streams get the stuff that is uplifted, rotting, and creeping in the hills. This measurement should be done for pure science alone, not for the engineers. Only so can the natural history of our continent be learned.

In conclusion, then, I would submit particularly to the Pacific specialists of this conference on reclamation and education, the splendid opportunity that the permanent national parks have for permanent observatories of geological process.

And to the Park Service of the United States I would recommend specifically that a physical geologist be attached to the service to coordinate plans for a geophysical observatory system in the parks, a system of experiment stations for study of all the earth laws by means of resident scientists, not mapping ancient formations, but measuring month to month the building of volcanoes and mountains, and the breakdown of the hills to make soils and sea bottoms; the making of rock, the uplift of the land, the rotting of hills, and the settling of the rubbish.

*First Pan Pacific Conference on Education, Rehabilitation, Reclamation, and Recreation*

*Honolulu, Hawaii, April 11 to 16, 1927*

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*Hon. Hubert Work, General Chairman*
*K. C. Leebrick, Executive Secretary*

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## *PLENARY SESSION (CLOSING)*

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### *Saturday Morning, April 16, 1927*

The session was called to order at 9 o'clock by the general chairman, who asked for the report of the executive secretary.

Mr. LEEBRICK. I wish to make the following report:

Committee on credentials—Hon. Raymond C. Brown, secretary of Hawaii, chairman; A. L. Andrews, University of Hawaii, representing Tufts College; Massachusetts, and the executive secretary.

Committee on program and arrangements—J. J. Tigert, chairman; Stephen T. Mather; Elwood Mead; N. Murakami, department of education, Japan; S. H. Smith, director of education, Australia; H. Gourdon, inspector general public instruction, France; Islay McOwen, secretary for native affairs, Fiji Islands; K. Su'a, department of education, American Samoa; Salvador Novo, secretariat of education, Mexico; W. F. Kennedy, New Zealand; K. C. Leebrick, Institute of International Relations, Riverside, Calif., executive secretary of the conference.

Committee on resolutions—Hon. W. R. Farrington, Governor of Hawaii, chairman; J. J. Tigert, United States Bureau of Education; William Cattanach, Australia; Shao Chang Lee, China, delegate at large; H. Gourdon, France; Manabu Miyoshi, Japan; W. F. Kennedy, New Zealand; K. Su'a, Samoa; E. T. Belon, Peru; Salvador Novo, Mexico.

The GENERAL CHAIRMAN. The report of the executive secretary has been received. Is there any report from the credentials committee?

Mr. BROWN. I take pleasure in making the following report:

HONOLULU, HAWAII, *April 16, 1927.*

*Hon. Hubert Work, chairman, and delegates to the Pan Pacific Conference on Education, Rehabilitation, Reclamation, and Recreation.*

GENTLEMEN: Your committee on credentials beg to submit the following report:

In the conference, Governments are represented by 40 delegates, as follows:

| | | |
|---|---|---|
| United States | 14 | |
| Australia | 5 | |
| Chile | 1 | |
| Colombia | 1 | |
| Fiji Islands | 1 | |
| France | 1 | |
| Great Britain | 1 | |
| Japan | 9 | |
| Mexico | 3 | |
| New Zealand | 1 | |
| Nicaragua | 1 | |
| Peru | 2 | |
| | | 40 |

States and Territories are represented as follows:

| | | |
|---|---|---|
| Massaehusetts | 1 | |
| Hawaii | 7 | |
| | | 8 |

States represented by superintendents of public instruetion are as follows:

| | | |
|---|---|---|
| American Samoa | 1 | |
| Hawaii | 1 | |
| Mississippi | 1 | |
| New Mexieo | 1 | |
| Utah | 1 | |
| | | 5 |

| | |
|---|---|
| Delegates at large | 21 |
| Educational institutions | 103 |
| Educational, scientific, and teehnical associations, ete | 62 |
| Total | 239 |

We find that there are a number of individuals designated to represent more than one organization or institution. In many instanees names are duplicated and in some instanees triplicated. Consequently, we are deducting 17 to arrive at the number of individual delegates in the conferenee.

| | |
|---|---|
| Deduct, therefore | 17 |
| Total delegates | 222 |

Twelve countries are represented. In addition, there are delegates from Ameriean Samoa, India, and Palestine. China is represented, but unofficially.[1]

Respectfully submitted.

RAYMOND C. BROWN, *Chairman.*
ARTHUR L. ANDREWS.
K. C. LEEBRICK.

The GENERAL CHAIRMAN. Is there any report from the committee on resolutions?

Mr. LEEBRICK. The committee on resolutions wishes to submit the following resolutions:

[1] For detailed list of delegates, showing their representation, see page XVII.

*Resolved,* That the First Pan Pacific Conference on Education, Rehabilitation, Reclamation, and Recreation, in plenary session assembled, extend its appreciation to the President of the United States and also to the Congress of the United States for calling this conference and for sending the Secretary of the Interior to conduct it; and

*Be it further resolved,* That a copy of the foregoing resolution be forwarded to the President of the United States, to the President of the Senate, and to the Speaker of the House of Representatives of the United States.

*Resolved,* That the First Pan Pacific Conference on Education, Rehabilitation, Reclamation, and Recreation, in plenary session assembled, upon recommendation of the education section, declare it desirable to promote the interchange of educational ideas and the establishment of educational centers of information, through—

(1) The frequent visits of eminent university professors to other countries for limited periods for the purpose of giving courses of lectures.

(2) The establishment of a center in each of the participating countries where educational reports, bulletins, statistics, calendars, catalogues, and similar material issued by the universities, educational departments, and other institutions shall be collected, preserved, catalogued, and summarized for circulation.

(3) A consideration by the universities of English-speaking countries as to the desirability of giving recognition to the Japanese and Chinese languages, when taken in properly accredited preparatory schools, on a basis similar to that accorded to European languages.

(4) The availability, as far as possible, of descriptions of the various systems of education obtaining in the different countries through official sources, in the language of the countries bordering on the Pacific.

(5) Calling the attention of government educational officials to the desirability of uniformity in educational terminology, with the suggestion that the United States Bureau of Education consider the feasibility of issuing a glossary of educational terms now current in the countries of the Pacific.

(6) The appointment of educational attachés to the respective embassies and legations of the several governments of the countries participating in this conference.

(7) The appointment by the several governments here represented of a Pan Pacific committee on cooperation between museums, to the end that ways and means may be studied to bring about closer cooperation between all the various types of museums existing in the various countries invited to participate in this conference in the matter of exchange of personnel, research students, information, publication, exhibits, and research material, and cooperation in exploration and scientific research.

*Resolved,* That the First Pan Pacific Conference on Education, Rehabilitation, Reclamation, and Recreation, in plenary session assembled, upon recommendation of the educational section, express its belief that vocational education and vocational rehabilitation have an important part in the conservation of human and material resources, and whereas vocational education has been largely limited to preparation for the professions and higher technical operations, in which a relatively small number of the people can be engaged, declares it desirable that—

1. Vocational education of less than college grade be included in the public schools' program for the benefit of those who do not go to college.

2. An opportunity be given to those vocationally handicapped through accident or disease, and who are unable to carry on in their former occupation, to prepare themselves for earning a living in some other occupation for which they are not vocationally handicapped and for which they can be successfully trained.

3. Vocational education be so organized as not only to train individuals for a certain industry but at the same time build toward well-rounded and satisfied citizenship.

4. The responsibility of a nation to stimulate and promote such a vocational program in the interests of its national prosperity be recognized.

5. The term "vocational education" be considered as meaning any education or training which has for its purpose the preparation or training of the individual for advantageously entering upon employment in some specific occupation or the upgrading of the individual in the occupation in which he is already engaged.

6. The public school should include in its program, courses in "prevocational" subjects and a program, of vocational guidance as a means of better directing youth into suitable employment.

*Resolved*, That the First Pan Pacific Conference on Education, Rehabilitation, Reclamation, and Recreation, in plenary session assembled, upon recommendation of the Education Section, affirm that the standards of child life have an important relationship to the welfare of nations, and that therefore,—

1. The extension of parental education in the mental and physical care of the infant and the preschool child by means of health centers, conferences, child-study circles, visiting nurses, correspondence courses, and other agencies should be encouraged.

2. There should be a systematic coordination of the home with the school program for the promotion of mental hygiene and physical health among the children.

3. There should be introduced, as far as possible, into the curriculum of secondary schools, courses in maternal and child hygiene.

*Resolved*, That the First Pan Pacific Conference on Education, Rehabilitation, Reclamation, and Recreation, in plenary session assembled, upon recommendation of the reclamation section, affirms—

1. Its strong conviction that control of all water in rivers, streams, springs, lakes, marshes, and natural receptacles and water sources should vest in the government.

2. The necessity of recognizing the fundamental requirements of land settlements should be those that will assure the efficient and bona fide settler security of tenure, including extended terms of payment for the land, sympathetic assistance by means of advances of money for the preparation and establishment of the farm in its early stages, the providing, as far as practicable, of social conveniences and means for recreation and the encouragement in every way of individual effort and initiative.

*Resolved*, That the First Pan Pacific Conference on Education, Rehabilitation, Reclamation, and Recreation, in plenary session assembled, upon the recommendation of the recreation section, suggest—

1. That every effort be made for scientific, educational, and recreational reasons, to conserve in their natural state, plant, animal, and bird life in certain defined areas, and that constructive attempts be made to keep out invasive plant and animal pests, so as to maintain as far as possible the existence of the areas in their primal state.

2. That while excellent work is being done by certain nations for the creation of natural monuments and for the preservation of places of natural and historic value, steps should be taken by all governments for the preservation of those areas that should be set aside by reason of their natural and historic value and cared for by National or State appropriations.

3. That the governing authorities of the far eastern games be requested to include in its list of nations eligible to compete all countries bordering on the

Pacific Ocean, and that games be held during such years as not to interfere with the international Olympiads.

*Be it further resolved*, That the First Pan Pacific Conference on Education, Rehabilitation, Reclamation, and Recreation, in plenary session assembled, convey to His Excellency the Governor of Hawaii, to the Territorial Legislature, and to other officials, its formal appreciation for the whole-hearted cooperation and assistance which it has been given and without which the conference could not have been successfully carried on.

*Be it further resolved*, That a formal expression of appreciation be extended to the various executive departments of the United States Government, each of which has contributed in some manner to the work of the conference.

*Be it further resolved*, That a deep sense of appreciation be voiced to the local press, hotels, and other organizations and groups that have so generously cooperated in the entertainment and success of this conference. The conference is under deep obligation to the Territorial Hotel Co. (Ltd.) for placing its facilities at the disposal of the conference and providing adequate accommodations for the guests, meetings, and exhibits.

*Be it therefore further resolved*, That a copy of the foregoing resolution be furnished to the press and to the local hotel company.

*Be it further resolved*, That the conference express sincere thanks to the members of the general entertainment committee, the ladies' committee, and all others whose untiring efforts have contributed so largely to the comfort and pleasure of the delegates.

*Be it further resolved*, That the conference express its appreciation of the efforts made in its behalf by the chamber of commerce, the public schools, and various private organizations that have promoted its success in every possible way.

*Be it further resolved*, That greetings and expressions of appreciation be transmitted through the official delegates to all the nations participating.

In view of the great value arising from the conference just held it is believed that similar conferences should be held at regular intervals, and that the President of the United States be respectfully invited to submit the resolutions carried to the various interested Governments and to suggest that another conference should be held during the next two years at such time and place as may be mutually agreed upon.

W. R. Farrington, (*Chairman*), *Hawaii.*
John J. Tigert, *United States of Ameriea.*
William Cattanach, *Australia.*
Shao Chang Lee, *Delegate at Large.*
H. Gourdon, *France.*
Manabu Miyoshi, *Japan.*
W. F. Kennedy, *New Zealand.*
K. Su'a, *Samoa.*
E. F. Belon, *Peru.*
Salvador Novo, *Mexico.*

The General Chairman. You have heard read the report of the resolutions committee. This report has been unanimously signed by the committee and no contrary report has been submitted. However, if there are any objections from any source to any paragraph or section of this report, we will be glad to hear it discussed.

Mr. Kennedy. I wish to suggest that the appreciation of the conference be given to Alexander Hume Ford.

Mr. FORD. I would rather that my name be deleted from the minutes.

The GENERAL CHAIRMAN. Complying with your request, your name will not be included, nevertheless your services are deeply appreciated, whether recorded or not.

Hearing no objections to the adoption of the resolutions, a motion will be in order.

Doctor TIGERT. I move that the executive secretary be instructed to cast the vote of the conference for the adoption of the resolutions.

(This was done and the resolutions unanimously adopted.)

The GENERAL CHAIRMAN. Have you anything further, Mr. Secretary, to report?

Mr. LEEBRICK. I should like to read the following telegram, received by His Excellency the Governor of Hawaii, from His Excellency the Governor of Guam:

Greetings to yourself and the conference. Deeply regret I am unable to attend. Guam joins me in congratulations on its certain success and attainments.

(Signed) SHAPLEY,
*Governor of Guam.*

I should also like to read the following letter from the Pan Pacific Women's Conference:

HONORABLE CHAIRMAN OF THE PAN PACIFIC CONFERENCE ON EDUCATION, REHABILITATION, RECLAMATION, AND RECREATION.

DEAR SIR: The executive committee of the Pan Pacific Women's Conference asks the privilege of presenting the following request: That the honorable delegates of the Pan Pacific Conference on Education, Rehabilitation, Reclamation, and Recreation recommend to the several Pacific countries represented that official delegates be sent to the Pan Pacific Women's Conference to be held in Honolulu, June 14 to 24, 1928, under the auspices of the Pan Pacific Union, Miss Jane Addams, honorary chairman.

Education, health, women in industry, women in government, and social service are the subjects to be considered at this conference.

Very respectfully yours,

JULIE JUDD SWANZY,
*Honorary Chairman, Executive Committee,*
*Pan Pacific Women's Conference.*

I shall be glad if one delegate from each foreign country represented will come to the platform so that we may wish him "Aloha," and he may have the opportunity to say a word to the conference, if he so desires.

Mr. CATTANACH (Australia). I, along with my friend, Doctor Smith, Director of Education of New South Wales, was appointed to represent Australia officially at this important conference, and I take the opportunity in a few words to say how gratified we both are with the success of this conference and the achievements that have been obtained at what may be termed its "initial meeting." We

recognize that through conferences and meetings such as these a much closer and better understanding can be obtained, not only of the domestic problems affecting each country but of the aims and ideals of the races of each country, and while quite recently we had the honor and pleasure of entertaining various fleets visiting Australia, we need not remind you that "peace has its victories no less renowned than war." We look upon this conference as the beginning of a new era in connection with the affairs of the various countries. The conference has been marked by the plain, outspoken views of the various delegates, but above all what appeals to Australia is the great and keen interest that has been taken in Australian affairs, and we appreciate very much the value of the resolutions which have been carried and the suggestion that a further conference should be held. It has been particularly gratifying to find the number of suggestions that the next conference should be held in Australia. We do not wish to usurp the claims or to block any other country, but Doctor Smith and I intend to convey home the impression that it would be a good and wise thing if another meeting could be arranged at an early date, and if it could be arranged for Australia. I can not give you a general invitation, but I promise you, sir, that we will carry back with us the terms of the resolutions, and also the sentiments that have been expressed in regard to a meeting in Australia. Nothing remains but for us to express most sincerely and deeply our thanks for the attention that has been paid to us since we have been here. To His Excellency the Governor of Hawaii we wish to convey, on behalf of Australia, our thanks for the arrangements he has made for our comfort and for the manner in which he has placed at our disposal all sources of information. We appreciate very highly the added prestige and importance that have been given to the conference by the presence of the Secretary of the Interior. Those connected with governmental affairs know how the pressure of time and business weighs upon those occupying high positions, and we appreciate the presence of the Secretary; but above all, and over all, what we appreciate most is the kindness of everyone with whom we have had dealings—every member of the conference and every one of the general public of Honolulu—in endeavoring to make our visit interesting and happy. We desire to thank you most cordially for our reception here.

(Chile and Colombia reported not present.)

Mr. McOwen (Fiji Islands and British western Pacific). I should like to say at the outset that in being appointed to represent officially the colony of Fiji and the British administration in the western Pacific I was not selected because of any educational, irrigational, or reclamational knowledge that I had. I really was selected because

there was a vacancy in our directorship of education. We have no irrigation schemes or reclamation schemes, but it was thought that if I, as secretary of native affairs, might attend this conference, I might be able to learn much that would be of assistance to us in dealing with our problems, many of which are similar to those found in the Territory of Hawaii. I was therefore selected to come here, and I have had a most interesting time. Although I did not speak at any of the meetings, I have been an interested spectator and listener, and I shall take back with me, I hope, a report that may be useful to my country. I have learned much not only on the subject of education but on many other subjects which I have had the opportunity of inquiring into during my visit. I should like to thank you, sir, very much indeed, and also those of Honolulu who have placed at my disposal and given me the opportunity and facilities of seeing so much of this wonderful country.

Fiji has an area about equal to that of Hawaii, and its productions are practically the same. Our educational system is more or less impoverished and has just grown up. There is nothing in our system I could tell you about that would be of advantage to the conference.

I feel that in attending this conference I have done at least what was expected of me. I have made voluminous notes of meetings and I feel sure that when I return home our Government and High Commissioner, who is one and the same person in Fiji, will be gratified to know that the conference itself has been such a successful one. I should like at this moment to express the hope that before I return to Fiji I shall be given the opportunity of obtaining copies of the resolutions adopted this morning. Finally, sir, I thank you very much for the very great kindness we have received in Honolulu during our stay here. It has been a wonderful experience for all of us, and it has certainly been an eye-opener for me. We in Fiji feel that at no distant date, with our natural resources, with Australia so near to us and the Dominion of New Zealand south of us, we shall probably be in the western and southern Pacific what this Territory of Hawaii is in the eastern Pacific. I only hope that our progress and development will be as rapid as has been the progress in the development of this Territory. I again thank you, sir, and all those who have so kindly entertained me during my stay here.

Mr. Gourdon (France). I wish to thank their excellencies for their invitation to attend this conference and to congratulate the American Government upon the initiative it has taken in calling the same. I congratulate the members of the conference on the work they have done and the resolutions they have adopted, and desire to say that it shows that their ideals in educational matters are identical. While the methods of education in the countries bordering on the Pacific vary, the goal to be attained is the same. By reason of this identity

of goals the nations have an equality of rights in peace. The choice of the meeting place here has been particularly happy, because we have not only theories of education here, but we also have them in practice. The great number of races living here happily are being joined together and are learning to have the same ideals. I desire to thank His Excellency the Governor of Hawaii, and to congratulate him on the work he has accomplished. I will carry back to France very loving memories of this conference. I extend Aloha to everyone.

Mr. PHIPPS (British consul). I very much regret that the pressure of official duties prevented me from regular attendance at this conference. However, I should like to extend congratulations to the members for all the work that has evidently been accomplished. I shall take pleasure in submitting a report of the conference to my Government, together with the list of resolutions. I hope that it may be possible for the resolutions to be acted upon. Once more I desire to express my thanks, on behalf of the Government of Great Britain, for the invitation to attend this conference.

Doctor MIYOSHI (Japan). It is both a great pleasure and a great honor to me, speaking on behalf of the Japanese delegation, to say a few words of thanks and appreciation at this the closing session of our conference.

It is, indeed, good cause for mutual rejoicing that in recent years international cooperation has been directed to the solution of the scientific, educational, and other important problems of the Pacific. The region is so vast, and its problems are so varied and so vital, that any adequate investigation of them is possible only when all the peoples of the Pacific join hands for that great purpose.

For this reason, that is to say, for the maintaining of the harmonious cooperation of the countries of the Pacific region in the study of their problems, the present Pan Pacific Conference, held here in Honolulu, under the auspices of the Government of the United States of America, is of very great significance. How very successful the conference has been, and how important its results as set forth in the record of its proceedings, it is not at all necessary for me to emphasize.

There is, however, a special and pleasant duty that devolves upon me. On behalf of the Japanese delegation, I desire to express to the American Government and people our grateful appreciation of their most kind hospitality and our earnest hope that this conference, held within their borders, will lead to the closer friendship and more intimate intellectual alliance of the Pacific people for the enhancement of the prosperity and enlightened progress of their respective nations.

Mr. NOVO (Mexico). Mexico conveys her appreciation of the invitation sent her to attend this conference. We now reach the end

of a delightful week and it has passed by in so many pleasant ways that we have been unable to count the hours. We now return with new ideas for our work. It is a wonderful experience to see how ideas may, at any moment, make friends of the most distant and strange individuals. Most of us had never heard of Doctor Tigert or Doctor Smith or Doctor Murakami, but after being with them a few hours in spiritual communion we feel that we have known them since long ago. Let us hope that sometime it will be the same with the nations of the world. Let us hope that a mutual understanding of ideals and a common interest in the happiness of mankind will blossom in the highest and noblest feeling there is in the heart of man—friendship!

Mr. KENNEDY (New Zealand). On behalf of New Zealand, I beg to express gratitude and appreciation for being invited to take part in this conference. I am sure the results, if there is to be what we call "carry-on" work, will be of inestimable benefit to the peoples of the Pacific. Mr. Gourdon has left me very little to say, and it is not necessary to go over the points he mentioned. I wish to thank Mr. Brown and Mr. Leebrick for their kindnesses and Doctor Tigert for his unfailing good-humor. I should like to say how much we appreciate friends from Japan, China, the Philippines, Mexico, and all the other countries of the Pacific. It is, indeed, a wonderful stimulus to the idea of understanding and friendship, which will in the future, I am sure, lead to untold good throughout the large areas of the Pacific Ocean.

(Nicaragua reported not present.)

Mr. BELON (Peru). I desire to congratulate His Excellency, the Governor of Hawaii, on the success of this conference. In view of the eminence of those chosen to participate in its meetings its success was assured. I wish to congratulate this conference, particularly on the work that has been done under the leadership of Doctor Mead, not only in his own name but in the name of his Government as well. I thank the officials of the Territory and private individuals for courtesies extended to me.

Mr. SU'A (American Samoa). On behalf of my Government, I wish to thank you all for the assistance that you have given Samoa during this conference. They say that if a person knows that he does not know, he is beginning to know. That applies to Samoa. I feel now that Samoa is beginning to know, because we feel that we do not know, and my heart is overwhelmed. This splendid occasion and the spirit prevailing make it impossible for me to express what I think at present. Robert Louis Stevenson said "Life is a continuous series of farewells." It grieves me that I am going to part from my very close friends; although I have had the pleasure of having your acquaintance for a few days only, I feel that I am not a stranger in

a strange land, but among my own kith and kin. It is a great pleasure to be here, and when Mr. Cattanach, the representative from Australia, extended the invitation for the next conference to be held in Australia, it made me think that I am one of the luckiest of all, because if it happens that the conference is held in Australia, you will naturally have to call at Samoa on your way there, and if it should ever be held in Fiji, you would naturally call at Samoa on your way back. So I am delighted to extend to you again the aloha of Samoa. I feel that it is a great blessing that Samoa has been represented here. On behalf of Samoa I wish to express my appreciation of the invitation to attend this conference.

The GENERAL CHAIRMAN. The remaining delegates being at home, it is not necessary for them to extend their farewells. Your Excellency, I wish that you would say a word to these people who have learned to appreciate your worth and to love you personally.

Governor FARRINGTON. My first thought in connection with this conference was expressed in the opening session—that education is is the process of adjustment to environment. We in Hawaii have endeavored to provide a friendly environment for the discussion of those things that are worth while to the peoples of this Pacific area. It has been very gratifying to the people of this Territory to listen to the kindly expressions that have greeted our ears. It is fitting for me, I think, as chairman of the committee on resolutions, to present another resolution which has come to me—it seems to me that our committee has forgotten one detail, and I am going to put this motion myself and I know that it will be seconded unanimously: "That the conference and the delegates here assembled extend a cordial vote of thanks and appreciation to Hon. Hubert Work, Secretary of the Interior, who has presided over this conference, and has been such an all-important factor in bringing it into being."

The motion has been put—all those in favor please rise.

(Standing vote unanimous.)

Secretary WORK. His Excellency the Governor is too modest. He conceived the idea of this conference and I had so little to do with it myself that I can not accept the resolution, although I appreciate the spirit in which it is offered. Doctor Tigert, Doctor Mead, Doctor Cumming, and Mr. Mather are responsible for the success of this conference. I can not take the credit to myself. I have often asked myself, What is life? I believe that the word "aloha" in the language of your native song which means "good morning," "I love thee," and "farewell," paints the picture of life as it should be in the fewest possible words.

The immediate purposes for which this conference was called have been fulfilled, and clearly its remote results may be anticipated with assurance.

The greetings of delegates from the many nations have been gracious and the meetings of many minds of men of the highest order have been frank and scientific.

Delegates to this conference have proved themselves to be earnest and open minded; each bringing his own message, not as an opportunist bent on self-promotion, but all alike bearing themselves as public servants, wedded to the greatest interests of their own country; men and women who have devoted their lives to public questions, realizing that selfishness destroys nations through the loss of human units.

The wealth of any nation can be best measured by the intelligence of its people, and, as all human results are turned by human contacts, anything contributing to the intangible national asset of intelligence returns to a people material prosperity.

We know of rules of conduct which individuals frame for themselves, presided over by personal monitors. Undoubtedly, there exists the more comprehensive national conscience. There seems to be dawning an unnamed consciousness, promising to crystallize into an international conscience. Methods of self-development and their amplification to meet the needs of growth and its expansions are essential to any country. These arise alike to all peoples and are best passed along as traditions are handed down.

This conference has recalled much that was forgotten and presented more that is new. There may be nothing new under the sun, but generations of men are renewed and must needs be reminded of that which has been proven.

The delegates to this conference have been traveling in the same direction at home; starting from different points, but all bent on reaching a common destination of truth and seeking to have it established by witnesses. Papers read and discussions brought out are the essentials of a profitable convention, but that which is gleaned through acquaintance and trite observations made to each other, you will carry with you as prizes.

Time is impressing governments that the conquests of an educated intelligence are preferable to conquering by war and that a unity of sentiment against the devastations of war, expressed by international, simultaneous protest against a nation's self-destruction is the most effective of pacifists.

This conference was conceived in this thought, that we might better know each other. No man can live and prosper alone, and no nation can thrive if isolated. Nation can meet nation at peace only through delegate representation, as in this conference.

Views, opinions, and thoughts can be best impressed by personal expression and must bear analysis to live.

I believe this conference will be referred to as epochal, as having initiated formal, but direct, personal interchange of information that has become knowledge, and, moreover, as having suggested new avenues along which human minds will travel and gather from the roadside, for public use, that which will contribute to the greatest common good of their own people.

As we sailed into this quiet, sunlit harbor, under hovering ships of the air, convoyed by boats bearing bands of music, thrilling us with our national anthems, mingled with the sweet strains of your native songs of welcome, greeted with smiling faces and draped with garlands of flowers, the heart would be dead indeed that did not cry out as did Joan of Arc, "My people, my people!"

Each of us has learned for himself what "aloha," your soft word of few letters, means. We know that in the language of the song "it means 'good morning,' 'good by' or 'farewell,'" but the best thing that "aloha" means is "I love you." Without the song we would learn this from the smile to the stranger on your streets, from the gift-bearing natives, from their patent desire to give, rather than to take away from those newly come.

The primitive life of those who pioneered these islands taught them what the involved competition of commerce has never learned, that those who give are blest rather than those who receive; that the joy of living comes from the sentiment in the heart and not from the logic of the head. I hope that those who may come later may not destroy this spirit of these islands.

Although peopled by many races of divers religions, it is inspiring to see that those native to the islands dominate social customs and usages, and particularly that newcomers have adopted their melodies and songs. It is important, of course, who may make our laws, but they will preserve the soul of a nation who write its songs.

We must now close our conference and, as we sail away, each to his appointed tasks and responsibilities, call back to you "Aloha." We will soon be scattered among many nations, but you have made us realize as never before that—

> "Kind hearts are more than coronets,
> And simple faith than Norman blood."

With the greatest reluctance we go from you, but we will live in the hope that "We may meet again beneath a tropic sky," on these hospitable islands, where "Welcome ever smiles and farewell goes out sighing."

The objects for which you were convened having been accomplished, I declare this Pan Pacific Conference adjourned without day.

# *FINANCIAL STATEMENT*

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
*Washington, October 12, 1927.*

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|---|---|---|---|
| Financial statement in regard to expenditures of appropriation for Conference on Education, etc., Honolulu, Hawaii, 1927, available to December 31, 1927 (first deficiency act, approved February 28, 1927, 44 Stat., p. 1252) | | | $20,000.00 |
| Expenditures: | | | |
| Material and labor for exhibits | | $6,893.80 | |
| Transportation of delegation— | | | |
| Railroad | | 805.09 | |
| *Steamship | | 970.00 | |
| Freight, express, and cartage on shipments of exhibits | | 1,189.57 | |
| Printing of advertisements, programs, etc., at Honolulu, Hawaii | | 360.05 | |
| Telegraph and telephone service | | 138.12 | |
| Subsistence (per diem) | | 1,577.63 | |
| | | 11,934.26 | |
| Outstanding obligations: | | | |
| Estimated cost of printing final report at Government Printing Office | $4,794.00 | | |
| *Steamship transportation of department representatives from San Francisco to Honolulu and return (claim pending before General Accounting Office) | 267.50 | | |
| | | 5,061.50 | |
| | | | 16,995.76 |
| Approximate balance September 26, 1927 | | | 3,004.24 |

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